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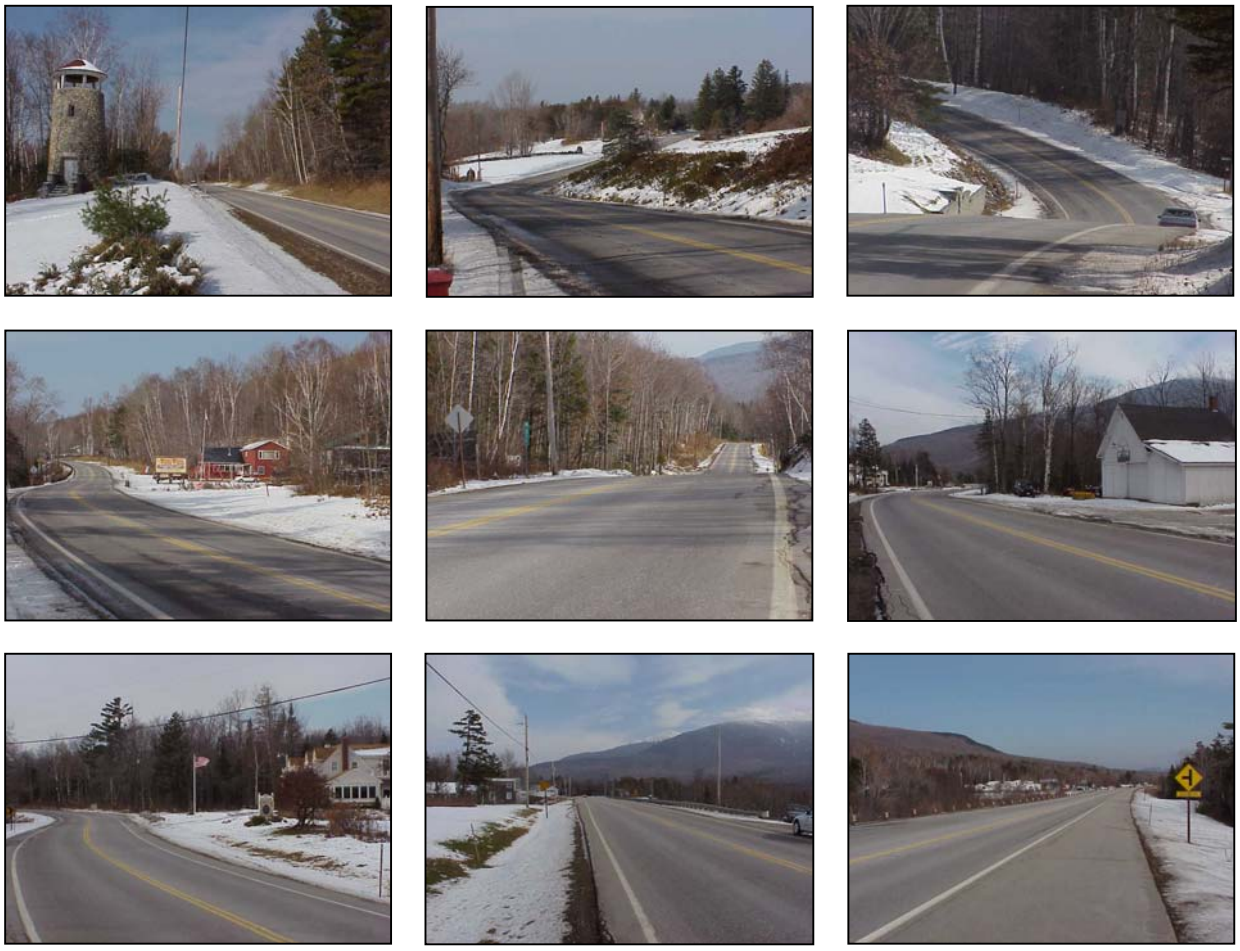

FINAL Environmental Study/ Section 4(f) Evaluation

March 2007

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PART I: INTRODUCTION

In December of 1999 the New Hampshire Department of Transportation (NHDOT) began an 18-month study of the US Route 2 corridor in NH. Recognizing the need to balance the various demands on this corridor, the States of Vermont, NH and Maine jointly pursued a cohesive plan through the Northern New England Corridor Project and the "Coordinated Border Infrastructure Program" under the US Department of Transportation (USDOT). The culminating documents, drafted in June of 2001, include a corridor-wide study, entitled US Route 2 Corridor Study New Hampshire, as well as individual documents for each of the five (5) US Route 2 towns in NH. The corridor study approach focused on the relationship between land uses and transportation resources, driven by community participation. This study was undertaken in conjunction with the NH Office of Energy and Planning (NHOEP), North Country Council (NCC), Complex Systems Research Center at the University of NH (CSRC), Vanasse Hangen Brustlin, Inc (VHB) and an Advisory Committee made up of representatives from each of the five (5) communities through which US Route 2 passes in NH (Shelburne, Gorham, Randolph, Jefferson and Lancaster) *(See Exhibit A1).*

The Advisory Committee reached consensus on the following recommendations, from high to low priority, for US Route 2 in New Hampshire:

- Provide consistent lane and shoulder widths – 12-foot lanes with 8-foot shoulders – realigning where appropriate and reducing shoulder width where necessary to no less than 4 feet, if possible
- Include turning lanes and other improvements when upgrading major intersections
- Provide bicycle accommodations
- Provide pullouts for slower vehicles or extra wide shoulders
- Provide pullouts for tourists – scenic vistas, camera spots
- Support / pursue an intermodal facility to reduce truck freight and free up capacity
- Support and encourage the development of a Regional Master Plan that encompasses land use, transportation, and economic development
- Review the feasibility of alternate routes off US Route 2 at specific locations, where appropriate
- Consider the merit of the existing Ten-year Transportation Improvement Program (TIP) projects on US Route 2

Recommendations, from highest to lowest priority, outlined in the study for the Town of Jefferson include the following (Items in **bold** are areas within the limits of the subject project.):

- Develop and implement a streetscape plan for the village area
- **Improve the alignment of US Route 2 from Jefferson Highlands to Bowman Divide**
- Provide sidewalk connections between establishments in the vicinity of Santa's Village
- Build a pedestrian under/overpass from the parking area to Santa's Village
- **Improve the rail trail to accommodate bicycles and pedestrians (hardpack)**
- Provide an underpass at Six Gun City
- **Develop an alternate route around Jefferson Highlands**
- Improve the alignment of Route 2 east of the village and west of Jefferson Highlands
- Establish a safe bicycle/pedestrian connection between North Road and Cohos Trail on the north side of Route 2

Recommendations, from highest to lowest priority, outlined in the study for the Town of Randolph include the following (Items in **bold** are areas within the limits of the subject project.):

- **Address noise (specifically tractor-trailers, along the US Route 2 corridor in Randolph**
- Add turning lanes at Randolph Hill Road
- **Design road improvements from Bowman Divide to the Jefferson town line**
- Address safety issues at scenic view at Randolph Hill Road
- **Improve and expand the Appalachia Trailhead**
- **Improve the rail trail to accommodate bicycles and pedestrians (hardpack)*[1]**
- **Pursue an underpass at Lowe's [Store] for snowmobiles and hiker/bikers**
- **Build an animal overpass (critter crossing) over Route 2 between Bowman Divide and Lowe's**

The proposed project, identified as a top priority in the corridor study, is only one of several roadway improvement projects currently included in the TIP along US Route 2. The other projects include:

Project Name & #	Location; Scope of Work
Northumberland – Lancaster, 13326:	Reclaim and 3" overlay NH Route 110, from US Route 3, east to RR overpass (Northumberland 1-mile), reclaim and overlay 3" US Route 2, from easterly (Lancaster 1.33-miles)
Lancaster – Jefferson (# not yet available):	Construct shoulders (location not yet available)
Gorham-Shelburne (# not yet available):	Construct shoulders (location not yet available)

Roadway improvement projects that have already been completed in the US Route 2 corridor include the following:

Project Name & #	Date Completed	Location; Scope of Work
Jefferson, 11618	9/30/1993	Truck lane at NH Route 115 for 0.6-mile to Black Velvet Road
Randolph, 10426	10/4/1993	"Bader's Dip," reconstruct 0.3-mi beginning 1000 feet west of Valley Road, continuing east
Shelburne, 12302	8/25/1995	Roadway reconstruction
Shelburne, 12597	10/17/1997	1" overlay and appurtenance work (drainage, guardrail, and other safety improvements) for 4.5 miles
Lancaster, 13344	12/21/1999	Replace box culvert and construct shoulders, pave 0.36 mile west of Jefferson town line

*1 The abandoned railroad corridor within the US Route 2 communities is currently being used as an alternative transportation corridor. Previously converted under "Rails to Trails" program, upgrades are needed to make the facility usable and accessible for all bicyclists and pedestrians.

The Advisory Committee developed the following criteria to evaluate current and future projects for the US Route 2 corridor:

- Improves public safety
- Protects/enhances region's scenic quality
- Sensitive to historic/environmental resources
- Level of public support
- Potential to foster/sustain economic development
- Timely implementation
- Relative cost

Each project developed by the Department, including the proposed action, should seek to respond to each of these criteria. The proposed action was determined to be a unique opportunity to incorporate roadway safety improvements while remaining sensitive to the needs of the communities of Jefferson and Randolph, specifically as it relates to the seven (7) criteria above. At the time of the corridor study, the 2001-2010 Ten-Year Transportation Improvement Program included improvements to US Route 2 from Jefferson Highlands to Durand Road West in Randolph (the subject project) *(See Exhibit A2)*. The five (5) corridor communities concurred with the importance of addressing this section of US Route 2.

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PART II: FINAL ENVIRONMENTAL STUDY

Existing Condition/ Need

US Route 2 is the main east-west corridor in northern New Hampshire, stretching for 57.0 km (35.4 mi) *(See Exhibit A1)*. It passes through the communities of Shelburne, Gorham, Randolph, Jefferson and Lancaster, and serves as a portion of an east-west corridor through Maine and Vermont. This corridor is a major truck transportation route between Canada and the Atlantic seaboard, and also serves as the local scenic road for many small New England towns and villages.

AASHTO (American Association of State Highway and Transportation Officials) classifies US Route 2 as a rural, minor arterial roadway, meaning it provides a linkage between cities, larger towns and other traffic generators. The design of the roadway should be expected to provide relatively high travel speeds and minimum interference to through movements. The AASHTO recommended cross section for this type of roadway is 3.6 m (12.0 ft) travel lanes with 2.4 m (8.0 ft) shoulders.

The study area for the project begins at NH Route 115 in Jefferson and extends east approximately 8.1 km (5.1 mi) to Durand Road West in Randolph. Proposed reconstruction begins at a point 760 m (2,493 ft) east of NH Route 115 and extends easterly 5.7 km (3.5 mi) to a point approximately 1,680 m (5,512 ft) west of Durand Road West. A 320 m (1,050 ft) gap built in the 1990s in the vicinity of Valley Road does not require reconstruction. Work also involves safety improvements, including shoulder widening, repaving, and guardrail and drainage improvements *(See Exhibit A2 & A3)*.

The existing roadway in the region was built in the 1920s and 1930s with various improvements completed over the years. Prior improvements along US Route 2 in the project area consisted of the following (*See Exhibit A)*:

- From NH Route 115 east approximately 1,000 m (3,281 ft) the roadway was widened in 1993 to construct an eastbound climbing lane. The roadway in this area consists of two (2) 3.6 m (12.0 ft) eastbound travel lanes, one (1) 3.6 m (12.0 ft) westbound travel lane, with a 1.2 m (4.0 ft) shoulder in each direction.

- In the vicinity of Valley Road, 320 m (1,050 ft) of roadway was reconstructed in 1993 to provide a 3.6 m – 3.0 m (12.0 ft – 10.0 ft) cross section.

- Approximately 1,680 m (5,512 ft) west of Durand Road West the roadway was reconstructed in the 1960s to provide two (2) 3.6 m (12.0 ft) westbound travel lanes with a 1.2 m (4.0 ft) shoulder, and one (1) 3.6 m (12.0 ft) eastbound travel lane with a 3.0 m (10.0 ft) shoulder.

US Route 2 in these towns is part of the NH state bicycle system *(See Exhibit G)*. Notwithstanding, the shoulders in Jefferson are currently not of sufficient width to safely accommodate bicyclists and pedestrians. By State standards, shoulders of 1.2 m (4.0 ft) and wider are adequate for shared bicyclist and pedestrian use, however by AASHTO design standards wider shoulders are recommended. The existing horizontal alignment, with the exception of the 'S' curve at Bowman Divide, 2000 m (6,562 ft) west of Durand Road West, satisfies 80 kph (50 mph) design criteria. The existing profile (vertical geometry) is deficient in several areas, most critically in the vicinity of Carter Spring, immediately west of the Bowman Divide 'S' curve and just east of the Valley Road intersection (*See Exhibit A)*.

US Route 2 from Lancaster to its intersection with NH Route 16 in Gorham is part of the Woodland Heritage Trail, a New Hampshire Scenic and Cultural Byway. The New Hampshire Scenic and

Cultural Byways Program was established in 1992 under RSA 238:19, "…to provide the opportunity for residents and visitors to travel a system of byways which feature the scenic and cultural qualities of the state within the existing highway system, promote retention of rural and urban scenic byways, support the cultural, recreational and historic attributes along these byways and expose the unique elements of the state's beauty, culture and history."

The project area is typical of rural New Hampshire. Lined with stonewalls and architecture reminiscent of the late 1800s, Jefferson still has elements typical of that time period in its National Register of Historic Places – eligible historic District: the Jefferson Highlands Historic District (JHHD). Entirely nestled within this District, elements of the northern migration of the New Hampshire summer tourism industry still survive. This area, known as the Carter Summer Cottages Historic Area, is included in descriptions of the JHHD and referred to as such throughout this document. The JHHD contains ten (10) contributing elements, including late 1800s – early 1900s buildings, a stone terrace and a stone tower *(See Exhibit B)*. Further to the east along the corridor, in the vicinity of Bowman Divide, the roadway is flanked by the Randolph Town Forest to the north, and the White Mountain National Forest to the south. Further to the east, at the project terminus, there is substantially more development, with Lowe's Store and numerous residential properties on the north side of the roadway *(See Exhibit S2)*.

The Average Annual Daily Traffic (AADT) on this section of roadway is 4,700 vehicles per day (vpd), with 20% trucks, and is expected to increase to 6,350 vpd by the year 2025. Accident data during the period of January 1993 – December 2001 indicates that seventy (70) accidents occurred within the project limits in Jefferson. Thirty-one (31) of these were in snowy/icy conditions, twenty-four (24) were with animals, and three (3) were at the US Route 2/NH Route 115 intersection. Nineteen (19) of these accidents resulted in injuries, and two (2) involved fatalities. In Randolph, for the same period, there were sixty-five (65) accidents. Twenty-three (23) of these were in snowy/icy conditions; twenty-seven (27) were with animals, while two (2) were at intersections (one (1) at the US Route 2/Valley Road intersection and one (1) at the US Route 2/Durand Road West intersection). Nineteen (19) of these accidents resulted in injuries, with zero (0) fatalities.

Deficiencies exist throughout the project corridor. They include the following:

1. There are virtually no paved shoulders at two locations within the project area. The first is from the end of the eastbound truck-climbing lane at approximately Sta. 816+70, just west of the JHHD, continuing east approximately 3.6 km (2.3 mi) to approximately Sta. 853+30, just west of Valley Road. The second area is from approximately Sta. 856+75, proceeding east approximately 1.2 km (0.7 mi) to Sta. 868+50, just west of the 1960s improved area, and east of the Bowman Inn.

2. The existing profile (vertical geometry) is deficient in several areas, most critically in the vicinity of Carter Spring, immediately west of the Bowman Divide 'S' curve and just east of the Valley Road intersection *(See Exhibit S4)*. These deficient portions of roadway cause sight distance limitations and do not meet the criteria for the 80 kph (50 mph) design speed.

3. The reversing curves ('S' curve) at Bowman Divide, in the vicinity of the Randolph Fire Station, from approximately Sta. 865+00 to approximately Sta. 869+00, do not satisfy the design criteria for the posted speed limit of 80 kph (50 mph). The result is deficient sight distances and unsafe conditions for the traveling speeds.

4. The existing pavement is in poor condition and is showing signs of stress and deterioration (rutting and cracking) *(See Exhibit S7).*

Proposed Action

The proposed improvements consist of the following *(See Exhibits A3 & D1):*

1. Reconstruct the existing roadway with select materials (12 in. (300 mm) gravel, 12 in. (300 mm) crushed gravel and 12 in. (300 mm) of sand) from approximately Sta. 813+00 at the beginning of the project, easterly 5.7 km (3.5 mi) to approximately Sta. 870+00 at the beginning of the 1960s improved portion of roadway.

2. Within the JHHD, from approximately Sta. 814+80, east 1.5 km (0.9 mi) to approximately Sta. 830+00, widen the roadway from the existing varying cross section of 3.6 m (12.0 ft) travel lanes with 0.3 m – 0.9 m (1.0 ft – 3.0 ft) shoulders, to construct 3.3 m (11.0 ft) travel lanes with 1.2 m (4.0 ft) shoulders. Widened shoulders will improve the safety of motor vehicles, pedestrians and bicyclists traveling this section of roadway *(See Exhibit E1).* The AASHTO standard cross section for this type of roadway is 3.6 m (12.0 ft) travel lanes with 2.4 m (8.0 ft) shoulders. Construction of this reduced typical will require a design exception from AASHTO standards. The posted speed limit on this section of roadway will be 60 kph (35 mph).

3. Outside the JHHD, from approximately Sta. 830+00, east 2.3 km (1.4 mi) to approximately Sta. 853+00, widen the roadway from the existing varying cross section of 3.6 m (12.0 ft) travel lanes with 0.3 m – 0.9 m (1.0 ft – 3.0 ft) shoulders, to achieve a uniform 3.6 m – 1.2 m (12.0 ft – 4.0 ft) typical section. Widened shoulders will improve the safety of motor vehicles, pedestrians and bicyclists traveling this section of roadway. The posted speed limit on this section of roadway will be 80 kph (50 mph).

4. From approximately Sta. 825+00, continuing east 0.7 km (0.4 mi) to approximately Sta. 832+00, realign the roadway to provide a maximum offset of approximately 3.6 m (12.0 ft) from the existing centerline to correct deficiencies in the vertical geometry while minimizing impacts upon the Wells property (parcel 11).

   From approximately Sta. 858+00, continuing east 0.4 km (0.3 mi) to approximately Sta. 862+00, realign the roadway approximately 7.5 m (25.0 ft) south of the existing alignment in the vicinity of Parcel 35 to correct deficiencies in the vertical geometry while avoiding impacts upon the National Register eligible Farrar property (Parcel 36).

   From approximately Sta. 863+00, continuing east 0.4 km (0.2 mi) to approximately Sta. 867+00, realign the roadway approximately 21.0 m (68.9 ft) south of the existing alignment in the vicinity of the former Randolph Fire Station (Parcel 70) to correct deficiencies in the horizontal geometry *(See Exhibit S3).* This alignment shift will require the acquisition of property from the former fire station. The Town of Randolph will not be requesting a functional replacement for the old firehouse and the Department will not be providing a functional replacement.

5. Pave the portion of reconstructed roadway from approximately Sta. 813+00 at the beginning of the project, easterly 5.7 km (3.5 mi) to approximately Sta. 870+00 at the beginning of the 1960s improved portion of roadway.

   Beginning at approximately Sta. 805+40, continuing east 0.7 km (0.4 mi) to the start of the proposed full-depth reconstruction at approximately Sta. 813+00, overlay the existing pavement in the area of the 1990s improvements.

   Beginning at approximately Sta. 870+00, continuing east 2.0 km (1.2 mi) to the project terminus at approximately Sta. 889+00, overlay the existing pavement in the area of the 1960s improvements.

6. Raise the profile of the roadway approximately 0.9 m (3.0 ft) at Carter Spring (approximately Sta. 824+40) to correct the deficient vertical curve and improve sight distance *(See Exhibit S4)*.

   Lower the profile of the roadway at the crest of the hill east of Valley Road (approximately Sta. 856+00) in the vicinity of the Farrar property (Parcel 35) approximately 1.2 m (4.0 ft) to correct the deficient vertical curve and improve sight distance.

7. Replace existing deficient sections of guardrail throughout the project limits. Throughout the corridor there exists cable guardrail that does not meet Federal crashworthiness standards. All substandard sections will be replaced with beam guardrail, or eliminated where roadway slopes can be flattened to eliminate the need *(See Exhibit S5)*.

8. Replace and/or extend numerous roadway cross culverts within the project limits. These culverts carry primarily intermittent streams and roadway drainage under US Route 2 *(See Exhibit S6)*.

9. Construct 1.8 m (6.0 ft) wide drainage ditches within all cut areas.

10. Construct a pedestrian/snowmobile underpass at approximately Sta. 888+35. Currently, snowmobiles must cross the highway in this area to connect to State numbered trails to the north and south and access services at Lowe's Store. This underpass has been designed to align with the existing snowmobile trail network. In addition, hikers will be afforded a more direct connection under the highway to the White Mountain National Forest trails, Lowe's Store and associated trailhead parking. The underpass will enhance safety for both the trail users and motor vehicles on the roadway.

11. To minimize and reduce the number of animal/vehicle collisions at the intersection of NH Route 115 and US Route 2, consideration will be given to the recommendations in the wildlife study currently being conducted by the Audubon Society of New Hampshire (ASNH), which could include construction of enhanced signage, enhanced lighting, an infrared detection system and/or erection of additional delineator posts. At Bowman Divide, consideration will be given to the recommendations in the wildlife study currently being conducted by ASNH, which could include additional delineator posts and/or enhanced signage. See the **Wildlife/ Fisheries/ Endangered Species/ Natural Communities** section for more information.

Alternatives to the Proposal

"No-Build"

The "No-Build" alternative is not considered feasible and prudent, as it does not address the existing safety deficiencies along this portion of US Route 2. Given the projected increases in AADT (currently 4,700 vpd and projected to increase to 6,350 vpd by the year 2025), coupled with the high percent truck traffic (20%), the safety concerns would persist, and the facility would substantially deteriorate. In addition, the impacts associated with the proposed action are not of a magnitude to warrant the selection of this alternative.

Bypass Alignment Alternatives

Area-Wide Bypass Alternatives

Alignments that "completely" bypass this section of US Route 2 are beyond the scope of this project. Although construction of any such alignment would avoid all impacts to the JHHD and individually eligible resources along the project corridor, there would be a need to acquire extensive amounts of new right-of-way. Any area-wide bypass would also have far greater impacts on undeveloped properties, streams, wetlands, farmlands, viewsheds, would result in much more wildlife habitat fragmentation, and would substantially increase project costs. As any area-wide bypass would involve steep and varying terrain, truck traffic would find the grade of the roadway difficult to overcome, resulting in substantially lower traveling speeds and unsafe travel. Moreover, there would still be a need to complete some remedial improvements along the bypassed portion of US Route 2.

Jefferson Highlands Historic District Bypass Alternatives

Northern Bypass

Although this 3.2 km (2.0 mi) bypass alignment to the north would remove traffic entirely from the JHHD, the purpose and need of the project would not be met. As the terrain to the north consists of the steep slopes of Bois Mountain, truck traffic would find the grade of the roadway difficult to overcome, resulting in substantially lower traveling speeds and unsafe travel. The amount of new right-of-way required would be approximately 7.9 ha (19.6 ac) with no use of any contributing elements of the JHHD. Contrary to the Town of Jefferson Master Plan, this bypass would cause a reduction in open spaces and impacts to natural resources with two (2) new surface water crossings, the clearing of 6.1 ha (15.0 ac) of forest lands, and the isolation of approximately 93.2 ha (230.0 ac) of wildlife habitat between the existing US Route 2 and the proposed bypass alignment. The construction costs associated with this alternative would be approximately $1.8 million more than the proposed action. Moreover, there would still be a need to complete some remedial improvements along the bypassed portion of US Route 2. The remaining 6.4 km (4.0 mi) portion of US Route 2 east of Jefferson Highlands would receive a combination of reconstruction and pavement overlay treatments as in the proposed action *(See Exhibit F)*. Following completion of remedial improvements on the bypassed portion of roadway, ownership and all future maintenance responsibility would be turned over to the town of Jefferson. The Jefferson Board of Selectmen expressed unanimous concern that the town would be unwilling and unable to assume this responsibility without imposing an increased tax burden on the citizens of Jefferson.

Southern Bypass "A"

Initially developed by the residents of Jefferson Highlands, this conceptual alignment was carried through the preliminary design phase to a point commensurate with the on-alignment alternatives. It removes truck traffic from the JHHD in an effort to decrease noise pollution and increase safety on the bypassed section of the existing roadway. Although the construction of this 3.4 km (2.3 mi) bypass alignment would remove traffic from the existing US Route 2 through the JHHD, it would require a new location roadway through the historic district to the south. It would alleviate traffic problems on the existing roadway, but the additional right-of-way acquisitions would result in a use of approximately 3.0 ha (7.5 ac) of contributing elements of the JHHD, with total project acquisitions of approximately 9.1 ha (22.4 ac). Contrary to the Town of Jefferson Master Plan, this bypass would cause a reduction in open spaces and impacts to natural resources with four (4) new surface water crossings, the clearing of 7.3 ha (18.0 ac) of forest lands, and the isolation of approximately 62.8 ha (155.0 ac) of wildlife habitat between the existing US Route 2 and the proposed bypass alignment. The construction costs associated with this alternative would be approximately $2.0 million more than the proposed action. Moreover, there would still be a need to complete some remedial improvements along the bypassed portion of US Route 2. The remaining 6.1 km (3.8 mi) portion of US Route 2 east of Jefferson Highlands would receive a combination of reconstruction and pavement overlay, as in the proposed action *(See Exhibit F)*. Following completion of remedial improvements on the bypassed portion of roadway, ownership and all future maintenance needs would be turned over to the town of Jefferson. The Jefferson Board of Selectmen expressed unanimous concern that the town would be unwilling and unable to assume this responsibility without imposing an increased tax burden on the citizens of Jefferson.

Southern Bypass "B"

The construction of this 4.0 km (2.5 mi) bypass alignment would remove traffic entirely from the JHHD with no use of any contributing element of the JHHD. The amount of new right-of-way required would be approximately 9.8 ha (24.5 ac). Contrary to the Town of Jefferson Master Plan, this bypass would cause a reduction in open spaces and impacts to natural resources with six (6) new surface water crossings (including two (2) major crossings of the Israel River), the clearing of 6.9 ha (17.0 ac) of forest lands, and the isolation of approximately 125.6 ha (310.0 ac) of wildlife habitat between the existing US Route 2 and the proposed bypass alignment. Wetland impacts would potentially be a major concern due to the quantity of crossings and quality of associated wetlands. The construction costs associated with this alternative would be approximately $3.0 million more than the proposed action *(See Exhibit F)*. Moreover, there would still be a need to complete some remedial improvements along the bypassed portion of US Route 2. The remaining 6.4 km (4.0 mi) portion of US Route 2 east of Jefferson Highlands would receive a combination of reconstruction and pavement overlay, as in the proposed action. Following completion of remedial improvements on the bypassed portion of roadway, ownership and all future maintenance needs would be turned over to the town of Jefferson. The Jefferson Board of Selectmen expressed unanimous concern that the town would be unwilling and unable to assume this responsibility without imposing an increased tax burden on the citizens of Jefferson.

On-Alignment Alternatives

Jefferson Highlands Historic District Widening

3.6 m-3.0 m (12.0 ft-10.0 ft) Typical Section

Early in the project development phase of this project the construction of 3.0 m (10.0 ft) wide paved shoulders within the JHHD was considered, due to the projected AADT, coupled with the 20% truck traffic. However, this action would have resulted in substantial property impacts to contributing elements of the National Register eligible District, and would have required substantial impacts to stonewalls. As a result of a combination of public and resource agency input, it was determined that the environmental impacts associated with this alternative were not feasible and prudent. Moreover, although AASHTO design standards recommend wider shoulders, shoulder widths of 1.2 m (4.0 ft) are adequate by State standards to safely accommodate bicyclists and pedestrians. Therefore, this alternative was not carried beyond the conceptual phase for further consideration *(See Exhibit E2B).*

3.6 m-1.2 m (12.0 ft-4.0 ft) Typical Section

The construction of a 3.6 m-1.2 m (12.0 ft-4.0 ft) typical section was examined in an initial effort to minimize impacts within the JHHD. While this alternative met the project purpose and need of providing safe shoulders for pedestrians and bicyclists and providing a safer roadway in general, there was still considerable right-of-way required from historic resources within the JHHD. This alternative would not only have resulted in impacts to stonewalls, but would have required the use of approximately 0.4 ha (1.1 ac) of contributing elements of the JHHD. One major concern expressed by the State Historic Preservation Officer (SHPO) and Section 106 Consulting Party was that a wider roadway would alter the visual appearance of the District. As such, this alternative was abandoned *(See Exhibit E2A).*

Widening East of Jefferson Highlands Historic District

3.6 m-3.0 m (12.0 ft-10.0 ft) Typical Section

Early during the project development phase of this project, the construction of 3.6 m (12.0 ft) travel lanes and 3.0 m (10.0 ft) wide paved shoulders was considered between the Jefferson Highlands and the developed section of US Route 2 in Randolph, given the projected AADT, coupled with the 20% truck traffic. However, this action would have resulted in substantial property impacts, including impacts to National Register eligible properties, and would have required substantial impacts to stonewalls lining the roadway. Moreover, although AASHTO design standards recommend wider shoulders, shoulder widths of 1.2 m (4.0 ft) are adequate by State standards to safely accommodate bicyclists and pedestrians. As such, it was determined that the level of improvement provided by this alternative would have resulted in property impacts and environmental impacts not commensurate with the added corridor width. Therefore, this alternative was not carried beyond the conceptual phase for further consideration *(See Exhibit E2B).*

Modified 3.6 m-1.2 m (12.0 ft-4.0 ft) Typical Section

An option to minimize the aesthetic intrusion of 3.0 m (10.0 ft) shoulders, while providing additional width on the sides of the roadway for increased public safety was evaluated during the project development phase of this project. A modified 3.6 m-1.2 m (12.0 ft-4.0 ft) typical section was considered between the Jefferson Highlands and the developed section of US Route 2 in Randolph. This modified typical would have consisted of 3.6 m (12.0 ft) travel lanes and 1.2 m (4.0 ft) paved shoulders. The modification would also construct 1.8 m (6.0 ft) grassed panels adjacent to the paved shoulders. While providing a slightly less visually intrusive appearance than the alternatives with 3.0 m (10.0 ft) paved shoulders, this modified typical would have had virtually the same footprint impacts, including natural resource and property impacts, as the 3.6 m-3.0 m (12.0 ft-10.0 ft) typical section, with the exception of

narrower drainage ditches. As such, it was determined that the level of improvement provided by this alternative would have required property impacts and environmental impacts not commensurate with the added corridor width, therefore this alternative was not carried beyond the conceptual phase for further consideration *(See Exhibit E3).*

Evaluation of Environmental Effects

The effects of the project relative to the following social, economic, natural and cultural resources/issues have been reviewed. Resources/issues, which are not discussed in the body of the report, were investigated, however no impacts would occur. As such, these resources/issues are omitted from this environmental documentation. The resources and issues deemed applicable for this project are indicated in **bold** type.

Resources/Issues

Social/ Economic		Natural	Cultural
Safety	Farmlands	**Water Quality**	**Historical**
Transportation Patterns	Community Services	**Wetlands**	**Archaeological**
Air Quality	Energy Needs	**Surface Water**	**Stonewalls**
Noise	**Utilities**	**Groundwater**	**Aesthetics**
Displacements	**Environmental Justice**	**Floodplains**	
Hazardous Materials	**Drinking Water**	**Wildlife**	
Neighborhoods		**Fisheries**	
Business Impacts		**Endangered Species**	
Land Acquisition		**Natural Communities**	
Land Use		Wild & Scenic Rivers	
Tax Base		Stream Rechannelization	
Recreation		NH Designated Rivers	
Public Lands		**Forest Lands**	
Construction Impacts		Coastal Zone	

Discussions of the effects on resources/issues in **bold** follow.

Safety/ Transportation Patterns

The proposed project, which includes the widening, reconstruction and realignment of a section of US Route 2, will improve the level of safety on this section of roadway to vehicular traffic, and bicyclists and pedestrians by bringing drainage and guardrail up to current safety standards, providing a widened shoulder and correcting deficiencies in the vertical and horizontal geometry of the roadway. US Route 2 is the main east-west highway corridor in northern New Hampshire, and also serves as a portion of an east-west corridor through Maine and Vermont. Upon completion of the project, design deficiencies will be improved and driver expectancy will be improved, which will result in a safer shared use of the roadway.

The speed limit is currently posted for 80 kph (50 mph) throughout the limits of the project, however the design speed of the roadway is somewhat less, creating unsafe and deficient conditions. Within the JHHD the buildings are relatively close to the roadway and the area is more densely populated

than the remainder of the area of reconstruction. In an effort to minimize the property impacts and to have a calming effect on traffic, recognizing that a narrower roadway corridor is generally accepted as calming to traffic speeds, the reconstructed roadway will be designed and posted for 64 kph (40 mph) within Jefferson Highlands. Additionally, a combination of landscaping, curbing and rebuilding stonewalls that line the corridor, should prove as effective "traffic calming" measures.

The AADT on this section of roadway is 4,700 vpd, with 20% trucks, and is expected to increase to 6,350 vpd by the year 2025. Accident data during the period of January 1993 – December 2001 indicates that seventy (70) accidents occurred within the project limits in Jefferson. Thirty-one (31) of these were in snowy/icy conditions, twenty-four (24) were with animals, and three (3) were at the US Route 2/NH Route 115 intersection. Nineteen (19) of these accidents resulted in injuries, and two (2) involved fatalities. In Randolph, for the same period, there were sixty-five (65) accidents. Twenty-three (23) of these were in snowy/icy conditions; twenty-seven (27) were with animals, while two (2) were at intersections (one (1) at the US Route 2/Valley Road intersection and one (1) at the US Route 2/Durand Road West intersection). Nineteen (19) of these accidents resulted in injuries, with zero (0) fatalities. See **Existing Condition/ Need** section for more information.

Each automobile accident has an associated expense and incurs a societal cost as it relates to increased insurance premiums, emergency response, clean-up, and material damage. According to the National Highway Traffic Safety Administration (NHTSA), the average fatal automobile accident has a societal cost of approximately $3 million, the average injury only accident costs $63,000, and the average property damage only accident costs $2,300. In the year 2000 in New Hampshire alone, the economic cost of motor vehicle traffic accidents was approximately $1.014 billion. For the accident study period (January 1993 – December 2001), the societal cost of accidents on this section of roadway was approximately $8.6 million, using the estimators above.

Air Quality

The proposed project is located within an area of the State that is in attainment with respect to the National Ambient Air Quality Standards (NAAQS) for ozone and all other criteria pollutants (CO, NOx, VOCs, and PM10). The proposed work is not considered a "Regionally Significant Project" as defined in the final Transportation Conformity rules (40 CFR 51.392) or in those rules adopted by the New Hampshire Department of Environmental Services in accordance with the interagency consultation provisions required by 40 CFR 51.402. When completed, the project is not expected to result in significant air quality impacts or contribute to violations of the NAAQS. Consequently, this project is exempt from the conformity requirements of the Clean Air Act Amendments of 1990.

Though exempt from the requirements of the Clean Air Act, the National Environmental Policy Act also requires consideration of the project's impact on air quality. The proposed improvements will reconstruct existing facilities on essentially the same alignment. The proposed improvements will not substantially increase capacity or generate additional traffic, and when completed, the project will not substantially alter existing traffic patterns within the area. Traffic volumes are low and the conditions that contribute most substantially to the formation of elevated CO concentrations are not present. Therefore, as previously stated, the project is not expected to have an adverse impact on air quality.

Noise

The Federal Highway Administration has established Noise Abatement Criteria (NAC) of Leq 67 decibels (dBA) for residential land use and Leq 72 dBA for business and commercial land use. These criteria apply to exterior areas where frequent human use occurs and where a lowered noise level would be of benefit. Traffic noise impacts occur when the predicted traffic noise levels approach (are within 1 dBA), equal, or exceed the noise abatement criteria or when the predicted traffic noise levels substantially exceed the existing noise levels (increase by 15 dBA or more).

An analysis of traffic-generated noise within this project corridor was conducted in accordance with the NHDOT's "Policy and Procedural Guidelines for the Assessment and Abatement of Highway Traffic Noise for Type I Highway Projects". The noise study was performed using the FHWA's Traffic Noise Model 1.0 Noise Lookup Program. Estimated traffic volumes, in conjunction with roadway geometric coordinates and vehicle speeds, were used for computer input. Traffic generated noise levels were predicted for each noise receptor within the project area. There are approximately 60 residential and 3 commercial receptors within the project area. The analysis considered traffic volumes for the years 2005 and 2025. The results of the analysis are shown in the following table.

NOISE LEVELS Leq (dBA)

	2005		2025	
RECEPTOR*	NO-BUILD	BUILD	NO-BUILD	BUILD
Residential	50 - 64	50 - 64	51 - 65	51 - 65
Commercial	59 - 63	59 - 63	60 - 64	60 - 64

Under 2005 conditions, traffic noise levels are predicted to range from 50 dBA to 64 dBA at residential receptor locations and from 59 dBA to 63 dBA at commercial locations. All anticipated noise levels are below the abatement criteria. The short sections of realigned US Route 2 are not expected to have a noticeable impact on traffic noise levels. Noise levels at commercial locations will remain essentially the same. In all cases, the traffic noise levels remain below the abatement criteria.

By the year 2025, increased traffic volumes are expected to raise noise levels by 1 or 2 dBA throughout the project area. Under both no-build and build conditions, traffic noise levels will range from 51 dBA to 65 dBA at residential receptor locations and from 60 dBA to 64 dBA at commercial locations. All anticipated noise levels will be below the abatement criteria. Again, completion of the project will not have a noticeable impact on traffic noise levels. Given the anticipated traffic noise levels, no traffic noise abatement measures are warranted for this project.

In an effort to prevent future noise impacts on currently undeveloped land along US Route 2, noise levels were determined at various distances from the edge of the right-of-way of the road. The results of the analysis are as follows:

Predicted Noise Level dBA (Leq)

Distance From Center of Road			
Meters	(feet)	2005	2025
10	(33)	67	68
20	(66)	61	62
30	(98)	58	59
40	(131)	56	57

50	(164)	54	55

As can be seen, as long as care is taken to maintain some distance between development and the road, land may be developed without becoming incompatible with anticipated highway noise levels. Provided to local officials, this information will be useful in making appropriate land use decisions.

Hazardous Materials/ Contaminated Properties

A field review on March 26, 2003 did not reveal the visual presence of contaminated properties within the limits of the subject project. There is one gas station (Lowe's Store) at the eastern terminus of the project, however no evidence of contamination was apparent. A database search of the Department of Environmental Services (DES) One-Stop Environmental Sight Information Guide indicated that no hazardous/contaminated properties should be encountered in the project area during construction. An ISA was completed on August 27, 2004 *(See Exhibit H).*

Neighborhoods/ Business Impacts/ Land Acquisition/ Tax Base

The roadway consists of 3.6 m (12.0 ft) travel lanes with paved shoulders varying in width between 0.3 m – 1.0 m (1.0 ft – 3.0 ft) throughout most of the project area. In the 1960's improved area, the roadway consists of two (2) 3.6 m (12.0 ft) eastbound travel lanes and one (1) 3.6 m (12.0 ft) westbound travel lane. The paved shoulders are 3.0 m (10.0 ft) wide. The project area is typical of rural New Hampshire. Jefferson Highlands is the most built-up segment of roadway in the project area, containing primarily residential and community properties (church). These properties are both seasonally inhabited in some instances, while others are year-round residences. The proposed improvements should improve the quality of life for residents in the Highlands by:

- Reducing the posted speed limit and design speed of the roadway in the Highlands from 80 kph (50 mph) to 64 kph (40 mph).
- Providing widened paved shoulders from the existing 0.3 m-0.9 m (1.0 ft-3.0 ft) to 1.2 m (4.0 ft) uniformly. The widened shoulder will provide a safe area for pedestrians and bicyclists on this section of roadway.
- Reducing the travel lane width from 3.6 m (12.0 ft) to 3.4 m (11.0 ft) should have a calming effect on traffic, encouraging slower driving speeds, thereby enhancing safety.
- Correcting deficiencies in the vertical geometry of the roadway by lowering the roadway crest at Carter Spring by 1.2 m (4.0 ft). Reducing the "dips" and "hills" in the roadway will reduce the need for truck accelerations and decelerations, which accounts for 20% of the AADT.

Further to the east, at the project terminus, there is substantially more development, with Lowe's Store on the north side of the roadway and numerous residential properties on both sides. NHDOT proposes to repave the roadway in this area. There are no changes that will adversely affect the existing conditions.

There are several businesses within the limits of this project: the Waterwheel Restaurant, Bowman Inn, and Lowe's Store *(See Exhibits D1 & S9-10).* There are no substantial changes to the roadway in the vicinity of the Waterwheel Restaurant that would adversely affect that business. The alignment of the reconstructed roadway at the Bowman Inn will be approximately 16.0 m (52.5 ft) further away from the structure. This new alignment will not adversely affect the operation or economic vitality of the inn. At Lowe's Store the roadway will be repaved with no work outside the limits of existing pavement. Just east

of Lowe's Store, a pedestrian/ snowmobile underpass will be constructed to improve access to the store and surrounding trail network.

The proposed project will require the acquisition of **12,309 m^2 (132,494 ft^2)** of land outside of the existing right-of-way, **17,852 m^2 (192,159 ft^2)** of permanent easements, and **2,948 m^2 (31,732 ft^2)** of temporary easements along the roadway to accommodate the work associated with this project (See table of **Property Impacts** below). With the incorporation of appropriate mitigation, including landscaping, these takings will not have a serious impact on these properties.

Property Impacts

Parcel #	Owner(s)	Parcel Size		Property Impacts					
				Permanent Acquisition		Permanent Easement		Temporary Easement	
		Ha	Ac	m^2	ft^2	m^2	ft^2	m^2	ft^2
4	Oleson Geraldine B. & Hartford, D.	5.7	14.2			43	4,623		
5	Olesen, Norman	108.1	267.0			294	3,165		
6	St. John United Methodist Church	0.2	0.5			175	1,884		
7	Olesen, Norman	N/A	N/A			541	5,823		
9A	Allen, Donald & Anita	1.5	3.7			11	118		
10	Carter Boismont Realty Trust	58.7	145.0			300	3,229	14	151
11	Wells, Thomas D. & Tricia	3.8	9.3			23	248	12	129
12	Pearse, Alice & Harry Jr.	6.5	16.0			277	2,982		
13	Hurzeler, Marc A. & Rosemary J.	44.6	110.0			186	2,002		
15	Visajaro Realty Trust (Waterwheel)	2.6	6.5			315	3,391		
16	Westgate, Christopher & Susan	0.5	1.2	23	248	69	743		
17	Balog, Alan & Laurette	2.8	7.0	84	904	820	8,826	35	377
18	Gagnon, Roland & Loraine S.	1.7	4.2	421	4,532	155	1,668	46	495
19	Sewick, Michael & Maureen	3.0	7.5	1,265	13,616	740	7,965	79	850
20	Westgate, Susan V. & Christopher R.	1.7	4.3	245	2,637	675	7,266		
21	Corrigan, Rupert E. & Wilma	10.3	25.5	1,250	13,455	634	6,824	18	194
22	Call, John M.	0.4	1.0	122	1,313	155	1,668		
23	Leon F. Dobridnia Trust Agreement	0.4	1.0	124	1,335	282	3,035		
24	Robinson, Scott & Elizabeth W.	0.4	1.0	152	1,636	208	2,239		
26	Stiles, Gregory	4.3	10.7	54	581	19	205		

Property Impacts (continued)

Parcel #	Owner(s)	Parcel Size		Permanent Acquisition		Permanent Easement		Temporary Easement	
27	Steele, Michael & Betsy D.	1.4	3.4	154	1,658	146	1,572	27	291
28	Corrigan Fam. 1998 Rev. Living Tr.	6.3	15.6	80	861	116	1,249	21	226
29	Corrigan Fam. 1998 Rev. Living Tr.	0.5	1.3			165	1,776	22	237
33	Bardenheuer, Gretchen & Dean D.	3.8	9.5			184	1,981	3	32
34	Biron, Charolette	11.5	28.3			226	2,433		
35	Farrar Family Rev. Living Trust	0.4	1.0					26	280
36	RLT Agr. A. E. Farrar & V. C. Farrar	31.6	78.0	56	603	162	1,744	134	1,442
37	Town of Randolph	2.4	6.0	297	3,197	236	2,540		
38	Maddock, Stephen J. II & Hudson, J.	3.2	8.0	549	5,909	206	2,217		
39	McMurtrie, David	27.5	68.0			10	108	50	538
40A	Hamanne, Gerard & Wallingford, R.	3.5	8.6					4	43
40B	Hamanne, Gerard & Wallingford, R.	2.2	5.5					36	388
55	Lowe, Gordon Alan Jr. & Lucille I.	1.2	3.0			24	258	596	6,415
62	Lowe, Gordon Alan Jr. & Lucille I.	30.4	75.0			19	205	487	5,242
70	Town of Randolph	0.5	1.2	1,220	15,759				
71	Maddock, Stephen J. & Susan R.	7.5	18.5	663	7,136	762	8,202	54	581
72	Maddock, S. & Hudson, J. RLTA	8.7	21.6	701	7,546	133	1,432	14	151
73	E. Farrar & Verna Clark Farrar	31.5	78.0	1,863	20,053	717	7,718		
74	Cairns Family Rev. Trust – 2003	6.3	15.6			397	4,273	189	2,034
74A	Cairns Family Revocable Trust	0.8	2.0			109	1,173	20	215
82	Corrigan Terry	1.0	2.5					37	398
82A	Corrigan, Terry	1.1	2.8			108	1,163		
83	Palm, Jeanne	0.4	1.0	135	1,453			139	1,496
84	Bader, Curtis & Nurnet	7.7	19.1	870	9,365	815	8,773	22	237
85	Gagnon, Paul & Sylvia	2.0	5.0	229	2,465	349	3,757	98	1,055
86	Otto, Frederick A. & Curcuru, P. M.	2.1	5.1	258	2,777	76	818	13	140
87	Otto, Frederick A. & Curcuru, Phyllis	1.2	3.0	23	248				
88	Kirmmse, Bruce H.	7.7	19.2	22	237				
89	Vaillancourt, Danny R. & Luella J.	0.6	1.6	129	1,389	62	667		
90	Bernier, Darrell & Patricia	9.1	22.5	516	5,554	258	2,777	304	3,272
91	Hebert, Deborah S.	1.4	3.5			516	5,554	46	495
92	Norrad, Martin B. & Chatland, Carol	6.4	15.7	6	65	677	7,287	180	1,938
93	Kilkenny Resources	10.6	26.1			265	2,852	72	775
94	Pare Living Trust	0.9	2.1			350	3,767		
95	Commette, James & Karin	2.0	5.0			17	183	38	409
95A	Commette, James & Karin	0.9	2.1			78	840		
96	Sherwood, Doris	2.0	5.0			607	6,534	6	65
96A	Sherwood, Doris	N/A	N/A			152	1,636		
97	Hurzeler, Marc A. & Rosemary J.	4.1	10.0	167	1,798	481	5,177		
98	Pearse, A. & Harry Jr. &Shevchuk, H	12.1	30.0	631	6,792	1,260	13,563	82	883

Property Impacts (continued)

Parcel #	Owner(s)	Parcel Size		Permanent Acquisition		Permanent Easement		Temporary Easement	
99	Carter Boismont Realty Trust	58.7	145.0			400	4,306		
100	Call, Malcolm G. & Shirley H.	18.4	45.6			67	721		
101	Ribner, Carol S.	2.8	6.9			109	1,173		
102	Olesen, John H. & Jean E.	1.3	3.2			127	1,367		
102-1	Hartford, Bruce A. & Donna O.	0.8	2.0			306	3,294	24	258
103	Olesen, John H. & Jean E.	18.6	46.0			1,238	13,326		
		Project Total:		**12,309**	**132,494**	**17,852**	**192,159**	**2,948**	**31,732**

The total estimated land area in the towns of Jefferson and Randolph is approximately 252.3 km^2 (97.4 mi^2). The total permanent project impacts are approximately 0.0302 km^2 (0.0116 mi^2), 0.0120%, of the total land area in these towns. As such, this project will not cause a change in land use in the project area, nor is it expected to have an effect on the tax base of the Towns of Jefferson and Randolph. In addition, there will be no residential or business relocations required by the construction of this project.

Recreation/ Aesthetics

There are many recreational opportunities for individuals who visit this area. Individuals who enjoy swimming, fishing, hiking, walking, biking, picnicking or just taking in a scenic view, frequent this area of the north woods. US Route 2 offers access to recreational facilities including the *Six Gun City* theme park in Jefferson. Several White Mountain National Forest trailheads begin along US Route 2 within the project limits. They include Castle Trail, Lowe's Path, Amphibrach Trail and Air Line Trail *(See Exhibit I).* Although people availing themselves of the recreational uses in the area might be inconvenienced during construction, existing access will be maintained to the extent possible.

In the shadow of Mount Randolph, Mount Starr King, and the Pliny Range of the White Mountains, US Route 2 is perched above the Israel River valley in the project area. There are many opportunities for scenic views, not only of the Israel River, but also of the Presidential Range of the White Mountains, which lies to the southeast of the project area along the entire corridor. Majestic in their appearance, the Presidential Range is often snowcapped, and breathtaking views can be seen year-round, creating a natural tourist draw to the area *(See Exhibit S11).*

Land Use/ Public Lands

The project area is typical of rural New Hampshire. The project area contains an historic district: the Jefferson Highlands Historic District (JHHD) at its western terminus, Randolph Town Forest and the White Mountain National Forest along the corridor, and a residential and commercial area at its eastern terminus.

The proposed action has been reviewed by the Office of Energy & Planning, Land Conservation Investment Program (LCIP) (now called the Conservation Land Stewardship (CLS) Program), and it was determined that there are no LCIP (CLS Program) resources within the project area *(See Exhibit J).* There is however, one (1) conservation parcel (Randolph Town Forest) located on the north side of US Route 2, approximately 2.1 km (1.3 mi) east of the Jefferson/ Randolph town line. With the exception of the US

Route 2 right-of-way, this parcel connects to the White Mountain National Forest to the south *(See Exhibit C)*. See the **Wildlife/ Fisheries/ Endangered Species/ Natural Communities** section for more information.

The Land and Water Conservation Fund (LWCF) is a program established by Congress in 1964 to create parks and open spaces; protect wilderness, wetlands and refuges; preserve wildlife habitat; and enhance recreational opportunities. Any alteration or conversion of LWCF properties necessitates a 6(f) conversion of property. Based upon a review of their LWCF files, the Department of Resources and Economic Development (DRED) has advised that there are no Section 6(f) parcels present in the project area *(See Exhibit K)*.

Utilities

The proposed project requires the relocation of aerial utility lines and power poles. Disruption to service, if any, will be kept to an absolute minimum. The following utility companies have been identified within the project area:

SERVICE	LOCATION
Public Service of New Hampshire (Electric)	Aerial
Verizon (Telephone)	Aerial

Environmental Justice

Executive Order 12898, enacted in 1994, requires that an environmental justice evaluation be conducted for all transportation projects that are undertaken, funded or approved by the Federal Highway Administration to avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, and social and economic effects on minority populations and low income populations. The environmental justice review for the proposed action shows that, based on 2000 Census data, Jefferson and Randolph have a percentage of low-income populations of 7%, which is considered above the average for the surrounding area. As such, additional outreach efforts should be undertaken to encourage public comment from this group. Efforts were made during the public participation process, including extended commenting periods and lengthier meetings, to include every interested individual, regardless of income level (*See Exhibit U*).

Water Quality/ Surface Waters

Numerous culverts will be upgraded or replaced within the project limits in conjunction with the proposed action. Many of these culverts carry either perennial or intermittent streams within the jurisdiction of the NH Department of Environmental Services (NHDES) Wetlands Bureau and the US Army Corps of Engineers (ACOE) beneath US Route 2. All deficient culverts will be replaced with reinforced concrete pipes (RCPs) with either headwalls or metal end sections, depending upon the need and landscape conditions.

There are several perennial streams within the vicinity of the project. Named streams include Stag Hollow Brook and Moose River. Additionally, there is one (1) unnamed stream at approximately Sta.

827+36. These waterbodies are tributaries to the Israel River, which is located to the south of US Route 2 in the project area. Originating in the Presidential Range of the White Mountains, the Israel River flows approximately 40.0 km (25.0 mi) northwest to the Connecticut River near Lancaster. There will be no impacts to Stag Hollow Brook, Moose River or the Israel River associated with the construction of the proposed action. In addition, there are eight (8) seasonal streams within the project limits. Impacts will be incurred to seasonal streams and the one unnamed perennial stream, at approximately Sta. 828+40, as a result of the extension or replacement of their respective culverts under the roadway *(See Exhibit D1).*

Currently, roadway runoff is primarily untreated, entering receiving waters as sheet flow from the roadway. Potential treatment areas will be identified during final design. Treatment will generally be achieved in closed subsurface drainage systems with catch basins, etc., and/or on the surface in drainage ditches, vegetated swales, etc. With the incorporation of treatment systems, water quality will be enhanced, even with the proposed widening.

Phase II of the National Pollutant Discharge Elimination System (NPDES), administered by the US Environmental Protection Agency under the auspices of the Clean Water Act amendments, mandates that all land disturbing activities involving 0.4 ha (1.0 ac) or more of disturbance include the preparation of a Storm Water Pollution Prevention Plan (SWPPP) to protect the integrity of surrounding waterbodies and wetlands. The project contractor will be required, as a contract provision, to prepare the SWPPP for this project prior to the commencement of construction activities. This plan will ensure that all exposed areas, where construction activities are ongoing, are stabilized using appropriate erosion control techniques. Drainage patterns will not change as a result of this project.

Wetlands

Proposed work associated with the widening of the roadway and drainage improvements for this project involve dredge and fill activities within areas under the jurisdiction of the Department of Environmental Services (DES) Wetlands Bureau and the US Army Corps of Engineers (ACOE). Impacts include 6,117 m^2 (65,843 ft^2) of permanent impacts necessary for the placement of roadway fill in wetlands and the replacement and/or extension of culverts. The proposed project will incur impacts to the following wetland types as classified by the US Fish and Wildlife Service (USF&WS) *(See Exhibits S13-S23):*

1. PEM1 – Palustrine, Emergent, Persistent
2. PFO1/4 – Palustrine, Forested, Broad-leaved Deciduous/ Needle-leaved Evergreen
3. PFO1 – Palustrine, Forested, Broad-leaved Deciduous
4. PSS1 – Palustrine, Scrub-shrub, Broad-leaved Deciduous
5. R3UB – Riverine, Upper Perennial, Unconsolidated Bottom
6. PSS/FO1/4 – Palustrine, Scrub-shrub/ Forested, Broad-leaved Deciduous/ Needle-leaved Evergreen
7. PSS1/4 – Palustrine, Scrub-shrub, Broad-leaved Deciduous/ Needle-leaved Evergreen
8. R2UB – Riverine, Lower Perennial, Unconsolidated Bottom
9. PEM1/FO1/4 – Palustrine, Emergent, Persistent/ Forested, Broad-leaved Deciduous/ Needle-leaved Evergreen
10. PEM1/SS1 – Palustrine, Emergent, Persistent/ Scrub-shrub, Broad-leaved Deciduous
11. R4UB – Riverine, Intermittent, Unconsolidated Bottom

The proposed impacts meet the criteria established for a "Major" impact Wetlands and Non-site Specific Permit administered by the DES Wetlands Bureau, and an ACOE State Programmatic General Permit (SPGP). The project was reviewed by the ACOE, DES Wetlands Bureau, NH Fish and Game Department (NHF&G), USF&WS, US Environmental Protection Agency (USEPA), and Federal Highway Administration (FHWA) at monthly Natural Resource Agency Coordination Meetings on April 17, 2002; August 21, 2002; February 19, 2003; March 19, 2003; April 16, 2003; October 15, 2003; February 18, 2004; June 23, 2004; July 21, 2004; November 2, 2005 and February 21, 2006. A representative of the NH Division of Historical Resources (NHDHR) and a Section 106 consulting party were also present at the April 17, August 21, February 19, March 19 and April 16 meetings above.

At the February 18, 2004 Natural Resource Agency Coordination Meeting, the DES Wetlands Bureau requested that compensatory mitigation be provided for wetland impacts. The Department met with both the Jefferson and Randolph Conservation Commissions on March 31, 2004 and worked jointly to determine what type of mitigation (upland preservation, wetland enhancement, wetland restoration and/or measures to make the roadway more wildlife friendly) would be most beneficial from their perspectives. Feedback provided to the Department suggested that emphasis be placed on preservation. Both town conservation commissions agreed upon a prioritized list of preservation opportunities for both communities as follows:

- Priority #1: A 12 ha (30 ac) parcel owned by the State of NH along NH Route 115 in Jefferson (Map 13 Lot 13). Parcel is adjacent to the Pondicherry Wildlife Refuge with the White Mountain National Forest to the south.
- Priority #2: A 28 ha (68 ac) parcel owned by McMurtrie along US Route 2 in Randolph (Map R14 Lot 7). Parcel surrounds Bowman Manor and abuts the Randolph Community Forest (RCF) on the east and north.
- Priority #3: A 14 ha (34 ac) parcel owned by Brown along US Route 2 in Randolph (Map R12 Lot 8). Parcel abuts Lake Durand Property to the west, US Route 2 to the south and Moose River to the north. Parcel would provide additional protection of Moose River corridor.
- Priority #4: NH Route 115 overlook in Jefferson to preserve scenic viewshed.
- Priority #5: A 14 ha (34 ac) parcel owned by Asetta/Reed along US Route 2 in Randolph (Map R14 Lot 9). Parcel abuts RCF.
- Priority #6: Protection of the Owl's Head Trail hiking corridor in Jefferson.

The Department reviewed Priority #1 with the Natural Resource Agencies on July 21, 2004 to determine if it would qualify as mitigation. All agencies in attendance, including the ACOE, USF&WS, US Forest Service (USFS), DES Wetlands Bureau, and NHF&G, agreed that this would be appropriate mitigation.

This proposed mitigation parcel (*See Exhibits Q & S39)* is approximately 12 ha (30 ac) in size and lies on the north side of NH Route 115, approximately 4.8 km (3.0 mi) south of the US Route 2 intersection. The Department purchased the parcel in the 1960's from the estate of William Goyer as part of a "special maintenance project," #S-4223. The parcel was formerly a gravel pit and had a dilapidated house close to the roadway. The roadway in this area had a very poor alignment with reversing curves. There is an existing driveway easement along the eastern side of the parcel that must be maintained as an access to a back lot. An informal internal review of recent sales of similar land in Jefferson indicated a rough estimate of the real value of this parcel between $55,000 and $100,000 and possibly higher with consideration of the value of the sand and gravel on site.

Although the parcel size exceeds the mitigation ratio of approximately 8-10:1 (preservation: wetland impacts) based on Wetlands Bureau Code of Administrative Rules Part Wt 803.05, the cost associated with its transfer is less than the cost of acquisition of another parcel. The parcel has an undetermined amount of wetland, with a small stream running through the rear. The Pondicherry Division of the Silvio O. Conte National Fish and Wildlife Refuge lies to the north, with the White Mountain National Forest to the south. Although not directly contiguous to the parcel, Pondicherry would benefit by the protection of this additional land. The USF&WS is interested in having the parcel protected because it provides an important habitat connection between Pondicherry and the neighboring White Mountain National Forest. The Nature Conservancy, Audubon Society and USF&WS have identified in an Environmental Assessment additional lands around Pondicherry as target acquisitions. They are now in the process of acquiring those parcels. Both the Jefferson and Randolph Conservation Commissions support the preservation of this parcel.

The Pondicherry Wildlife Refuge was designated a National Natural Landmark in 1974 by the National Park Service. The original Refuge was in two separate blocks of 235 and 70 acres that surrounded Big and Little Cherry Ponds. In 2000, Hancock Timber Resource Group sold 670 acres of prime wildlife habitat, including the land that connects the ponds, to the U.S. Fish and Wildlife Service, as part of the Silvio O. Conte National Fish and Wildlife Refuge. The two (2) Cherry Ponds are completely natural and are dammed only by beaver dams. The Pondicherry Wildlife Refuge is owned and managed by the Audubon Society of New Hampshire, the U.S. Fish and Wildlife Service, and the New Hampshire Department of Fish and Game. The New Hampshire Bureau of Trails and a local Friends group also play a role in the management of the Refuge*[2].

Groundwater/ Drinking Water

A review of the USGS Upper Connecticut/ Androscoggin River Basins, Northern NH Stratified Drift Aquifer map indicates that in the vicinity of the US Route 2/ Valley Road intersection, the roadway traverses the northern extremity of an aquifer associated with the Israel River (*See Exhibit T*). The transmissivity of this portion of the aquifer is less than 1000 ft^2 per day (very low). The proposed work along this portion of US Route 2 consists of widening the existing roadway to a 3.6 m-1.2 m (12.0 ft-4.0 ft) typical section immediately west and east of the intersection, and maintaining the existing 3.6 m-3.0 m (12.0 ft-10.0 ft) cross section at the intersection (*See Exhibit A3*).

Throughout the project area the Department is proposing to realign (shift) the roadway a maximum of 21.0 m (68.9 ft) in one area at Bowman Divide (Sta. 863+00 – 867+00). This portion of roadway is outside of the stratified drift aquifer identified above. With the exception of the proposed widening, there will be no change in impermeable surface, as the pavement from the old roadway will be removed.

*2 Background information on the Pondicherry Wildlife Refuge was obtained from the NH Audubon Society website at www.nhaudubon.org/sanctuaries/pondicherry.htm.

There are no public drinking water supplies in the area, however there are several private wells. Although it is not anticipated that the proposed action will cause adverse impacts to these drinking water

wells, analyses during the final design phase of this project will better identify potential conflicts. Any wells impacted by the construction of this project will be evaluated under the Department's Well Replacement Program. It is not anticipated that the productivity of the aquifer would be affected by the construction of this project.

The proposed snowmobile/ pedestrian underpass will be designed so as not to impact groundwater. This location will be further evaluated during the final design phase of the project.

Wildlife/ Fisheries/ Endangered Species/ Natural Communities

The proposed action has been reviewed by the USF&WS and the NH Natural Heritage Bureau (NHNHB) for the presence of federal or state, listed or proposed, threatened or endangered species, or other species of special or exemplary status. Based on currently available information, no such species or habitat occurs within the project area *(See Exhibits M & N)*.

During development of the proposed action, it became clear at numerous public workshops and informational meetings that animal/vehicle interactions should be a consideration in any proposed improvements along US Route 2 in Jefferson and Randolph. In an effort to address this concern, the Department hired a consultant to study wildlife populations and movement patterns in the project area. The wildlife study (*the Study)* identifies locations within the project corridor that are currently experiencing relatively high wildlife utilization and discusses methods to reduce wildlife mortality due to vehicle collisions. The emphasis of *the Study* was on those animals likely to be at higher risk of vehicle collisions, including large game animals (moose, deer, bear), furbearers, amphibians and reptiles, and certain raptors.

The Study makes specific recommendations to reduce animal/vehicle interactions that include both structural (overpass/underpass) and non-structural techniques. In "Zone 5," (Bowman Divide) *the Study* recommendations favor an underpass or overpass *(See Exhibit O)*. After thoroughly evaluating this issue, NHDOT is not proposing to incorporate any structural techniques in this project as it could not be established that the majority of the wildlife crossings of US Route 2 occur in "Zone 5." Instead the Department is focusing on additional research and several non-structural techniques to include as part of the design and construction. The reasons for this are as follows:

1. NHDOT recognizes that the Randolph Community Forest (RCF) on the north side of the roadway and the White Mountain National Forest (WMNF) on the south side of the roadway, at Bowman Divide, result in a continuous corridor of protected land. As indicated by the transect data in *the study*, "Zone 5" represents the second highest location of wildlife activity along the roadway (22 crossing movements, 10 parallel movements), although substantially less use than "Zone 1" (92 crossing movements, 71 parallel movements) *(See Exhibit O)*. Although "Zone 5" represents the second highest concentration of animal/vehicle collisions (19 moose, 2 deer, 1 bear) for the period of 1986-2002, the zone is one of the larger zones in its length along the roadway corridor. Within it, relatively high crossing movements were observed at two (2) transects separated by approximately 1.2 km (0.8) mile, thereby making it difficult to pinpoint an adequate location for a crossing structure.

2. In order to "funnel" wildlife to any crossing structure, a long length of fence (2.4 m – 3.0 m (8.0 ft – 10.0 feet high) would be required. Fencing would need to be considered well beyond the limits of the RCF property that extends approximately 262 m (860 feet) along the right-of-

way. This fence would constitute a maintenance concern, impair the aesthetics of the area and would be a nuisance for abutters. In the immediate vicinity of the crossing structure, the fencing would need to be placed at the toe-of-slope to allow wildlife access to the wallows adjacent to the road. Where breaks in the fence would be required (i.e. driveways), exclusion devices, such as gates, would need to be installed.

3. The proximity of nearby houses and resultant residential activity, and the presence of a trailhead and multi-use trail south of the roadway could deter wildlife from using the structure. Although wildlife in the Northeast may be typically better adapted to human presence than in other areas of the country where crossing structures have been constructed (such as Banff National Park), a structure would be largely experimental.

4. Although the ACOE indicated that the construction of a crossing structure would be a "permitable" action regardless of wetland impacts, there would be other resource impacts associated with its construction. In addition to tree cutting and the filling of wetlands, the NH Division of Historical Resources (NHDHR) has advised that there have been materials recovered at Bowman Divide relating to the earliest period of Native American presence in New Hampshire (Paleoindian-period ca. 10,000 years ago).

5. Typical cost associated with the construction of an overpass [10 m X 26 m (33 ft X 85 ft)] is estimated at approximately $750,000 to $1,000,000. The typical cost associated with an underpass of this size is estimated at approximately $250,000 to $350,000.

The highest frequency of accidents, and most animal utilization patterns, based on transect data, occur at the NH Route 115/US Route 2 intersection ("Zone 1"). Therefore, the Department is focusing its primary attention at this location. Consideration will be made for non-structural techniques to decrease animal/ vehicle collisions, including the following:

- Public education,
- Enhanced lighting,
- Shoulder striping/additional delineator posts,
- Signage and/or potential use of an infrared wildlife detection system.

Moreover, to address concerns in "Zone 5" at Bowman Divide *(See Exhibit O)*, the Department is also considering non-structural techniques, such as enhanced signage and additional delineator posts.

To further the understanding of wildlife movements in the region as they affect this corridor, the Department is participating with the Audubon Society of New Hampshire in the US Route 2 & NH Route 115 Wildlife Crossing Investigation in the Towns of Jefferson and Randolph. This study was initiated by the Audubon Society of New Hampshire in conjunction with the New Hampshire Fish and Game Department. Based on the availability of study results, findings of this study could be incorporated into the design of this and future projects along the US Route 2 and NH Route 115 corridors in Jefferson and Randolph as appropriate.

Floodplains/ Floodways

The intent of the proposed project, as it relates to drainage, is to perpetuate the existing conditions and to improve deficiencies wherever they exist. Deficiencies in culvert capacity will be evaluated during the final design phase of the project. All culverts will be sized to carry runoff for the appropriate design

storm (50 years for cross culverts, 10 years for curbed roadway sections and ditches). Furthermore, the Department has coordinated, and will continue to coordinate with our maintenance personnel to identify and address problem areas.

Randolph does not participate in the National Flood Insurance Program and Jefferson has flood maps with no elevations (unnumbered A zones) and no designated floodways. The Assistant State Flood Insurance Coordinator, Office of Energy & Planning (OEP), recommended close coordination with Jefferson town officials *(See Exhibit L).* The Emergency Management Director of Jefferson was notified of the proposed project on December 7, 2001 and did not respond with objections to the proposed project.

Cultural Resources

The Department has coordinated with the NHDHR and FHWA, to locate and identify National Register of Historic Places listed or eligible properties within the area and has determined how they would be affected by the proposed project. The Department also established coordination with the Jefferson Historical Society. In addition, two (2) local property owners became Consulting Parties to the Section 106 process. The project was reviewed with NHDHR, FHWA and consulting parties at regularly scheduled Cultural Resource Agency Coordination Meetings on March 14, 2002; April 4, 2002; June 13, 2002; April 10, 2003; November 19, 2003; December 11, 2003; February 8, 2004; September 3, 2004 and September 14, 2006. A Memorandum of "Adverse Effect" was signed on February 8, 2004. The project area contains sites that are sensitive for historic resources (extant architectural historical resources) and archaeology. The proposed project will require the acquisition of land outside of the existing right-of-way, and permanent and temporary easements on historic properties to accommodate the work associated with the proposed action. As temporary easements do not constitute an impact under Section 106, they are not included as impacts in this evaluation. See **Effects on Historic Resources** section below.

Description of Historic Resources

Historic Resources (Extant Architectural)

In December 2000, prior to the initiation of the subject project, residents of Jefferson Highlands had survey forms completed for a National Register of Historic Places Determination of Eligibility for the properties in the area. Based on that review, it was determined that an historic district exists in Jefferson: the Jefferson Highlands Historic District (JHHD). The District boundary begins with the Highland Chapel (Parcel 6) at the west, and terminates with Hoople Cottage (Parcel 11) and Carter's Cut Road at the east, a distance of approximately 1.2 km (0.8 mi) (*See Exhibit B*). The District is approximately 132 ha (327 ac) in size, and includes all of the extant resources relating to the turn-of-the-century summer community. Entirely nestled within this District is an area known as the Carter Summer Cottages Historic Area. The boundary of this area parallels in part that of the larger JHHD, but only includes resources directly related to the Carter family. The two areas collectively comprise one District *(See Exhibit B).* The contributing elements and individually eligible properties in the District are described under **Contributing Elements of the JHHD***[3] below. In addition to the JHHD, individual properties were surveyed for their National Register of Historic Places eligibility. These additional individually eligible properties, outside the JHHD, are described under **Individually Eligible Properties** below.

Contributing Elements of the JHHD

The following parcels contribute to the integrity of the Jefferson Highlands Historic District. In addition, many of these resources are individually eligible for the National Register of Historic Places.

- Parcel 6: Highland Chapel: Built in 1889-1890, the chapel is a vernacular, wood frame, gable-front structure, resting on a stone foundation. The roof is covered with asphalt shingles and walls are clad with wood clapboards. The south-facing façade features a three-stage tower that incorporates the main entrance at the ground level, a window on the second, and a belfry with segmental arch openings on the third. Although contributing within the JHHD, the property lacks sufficient historical or architectural significance to be individually eligible *(See Exhibit S24)*.

- Parcel 10: Dartmouth (Boismont) Cottage: Built in 1894 in the Queen Anne style and remodeled and moved back from the roadway in 1917 into its existing Colonial Revival appearance, the 2 ½-story building sits on a fieldstone foundation and has a gambrel roof covered with asphalt shingles. A broad stonewall, built ca. 1917, runs along the property's Route 2 frontage. This property is contributing within the JHHD. Moreover, it is individually eligible under Criteria A and C *(See Exhibit S29)*.

- Parcel 10: George Hallowell Studio: This studio is a small, 1-story, wood frame structure set back from the roadway between Siwooganock Cottage and Dartmouth (Boismont) Cottage. The building sits on a granite foundation with walls covered in clapboards. The roof is clad with asphalt shingles. The building is a contributing element within the JHHD, and is individually eligible under Criteria A and C *(See Exhibit S30)*.

- Parcel 10: Siwooganock Cottage: Built in ca. 1880, this 2 ½-story house is an excellent example of the Stick Style/ Queen Anne styles. It is a sidehall, side-gable, nearly square plan house sited perpendicular to the roadway. The foundation is fieldstone, walls are clapboard on the first story and shingle on the second. The roof is covered with asphalt shingles. The building is a contributing element within the JHHD, and is individually eligible under Criteria A and C *(See Exhibit S31)*.

- Parcel 11: Hoople Cottage: This house dates from 1892 and the outbuildings from approximately the same year; each features elements of the Queen Anne style. The original section of the house is a 2 ½-story, front gable, two-bay wide structure. The foundation is brick, and the roof is clad with asphalt shingles. The two (2) outbuildings on the property survive with minimal alterations. The stable, closest to the house, is a 1 ½-story structure gable-end to the roadway and resting on a stone and concrete foundation.

*3 Descriptions of elements of the National Register of Historic Places eligible Jefferson Highlands Historic District were taken from Jefferson Highlands Historic District Determination of Eligibility for National Register of Historic Places survey forms, prepared by Elizabeth Durfee Hengen in December 2000.

Walls are covered with clapboards. The carriage house is perpendicular to and west of the stable. Its walls are clad with clapboards and plain shingles. Hoople Cottage is a contributing property within the JHHD, however loss of integrity of materials is due to synthetic siding. The property is not individually eligible due to lack of individual significance and post-1950 alterations *(See Exhibit S28)*.

- Parcel 98: McCabe Carriage House: Located on this parcel are a carriage house and summer house built in 1907 and a residence built ca. 1933 to replace a summer cottage that burned in 1927 or 1928. The carriage house is a square plan structure on a fieldstone foundation with asphalt shingles. Walls are clad with shingles. The summerhouse is a rectangular structure with shingled walls. The main house is a 1-story, pre-fabricated dwelling located east of the outbuildings. The McCabe Carriage House and summerhouse are contributing elements within the JHHD. The McCabe House is non-contributing *(See Exhibit S32).*

- Parcel 99: Golden Terrace: Although the parcel as a whole is not contributing within the District, there is one contributing feature on site: a flattened, curved terrace with a high stone retaining wall along the south curve. Built in ca. 1905, it was intended to screen the barns and farm animals from view of the main residence to the north of the roadway. Due to its size and expense, this wall has always been referred to as the "Golden Terrace" *(See Exhibit S40).*

- Parcel 100: The Knolls: This house is a 1 ½-story, front-gable/ side wing building constructed in 1882 in the Shingle Style and remodeled somewhat ca. 1930. Walls are clad with shingles and the roof with asphalt shingles. This property is a contributing property within the JHHD, and may also be individually eligible under Criterion C *(See Exhibit S27).*

- Parcel 101: The Hummocks ice house, tool house and garage: All three (3) of these small, wood frame structures were built between 1898 and 1923. Each is considered a rare estate outbuilding. They lack National Register significance on their own, but contribute to the District *(See Exhibit S25).*

- Parcel 101: Carter's Stone Tower: This 9 m (30 ft) observation tower was built of local fieldstone and erected in 1898. Narrow slits in the sidewalls provide views as one ascends the interior circular stairs. An observation platform covered by a conical roof and capped by a finial tops the structure. The tower is a contributing resource within the District, and is also individually eligible under Criterion C, as one of only two (2) privately erected observation towers still standing within the White Mountains *(See Exhibit S26).*

Individually Eligible Properties

The following parcels do not lie within the limits of a National Register of Historic Places eligible or listed historic district, but are individually eligible for the National Register of Historic Places.

- Parcel 13: John Crawshaw, Sr. House & Mountaineer Cabins: This property consists of a 1 ½-story, side-gable, 5-bay dwelling erected ca. 1850 and remodeled in the early twentieth century. Its foundation has been parged with concrete, obscuring the original material beneath. The roof is covered with asphalt shingles. The Mountaineer Cabins are a group of seven (7) rustic cabins arranged on the edge of a broad, open hillside facing southeast. They are each a 1-story, side-gabled roof structures, clad with wood shingles or board and batten. Although the main house has lost some degree of integrity of design, workmanship, feeling and association, it retains integrity of location, materials and setting. The Mountaineer Cabins retain a high level of integrity of location, design, materials, setting workmanship, feeling and association. The property, as a whole, is individually eligible under Criteria A and C *(See Exhibit S33).*

- *No Parcel Number*: William B. Paschal Farm: The house is a 1 ½-story, side-gable house on a concrete block foundation. The gable roof, which is oriented parallel to the road, is sheathed with asphalt shingles. The eaves project slightly and return at the corners. Walls are covered with clapboards and trimmed with plain boards. The main entrance is centered on the historic façade and features a Greek Revival surround and partial sidelights. Projecting from the west gable end is a 1 ½-story wing that is likely original to the house. This property is eligible for the National Register under Criteria A for its associations with agriculture, an important 19th and early 20th century local historical context *(See Exhibits R & S34).*

- Parcel 36: Levi Lowe House: Built in ca. 1790, the 1 ½-story house is one of the oldest extant buildings in Randolph. It is a side-gable house that was likely originally a five-bay cape, but now reflects late 19th century – early 20th century alterations. It rests on a granite block foundation and is clad with wooden shingles with plain trim consisting of corner boards, casings, and cornice returns. Projecting from the rear is a 1 ½-story ell that dates from the 19th century. Although one of the oldest buildings in Randolph, it is still unclear as to its National Register eligibility. To make a final determination of eligibility further survey work would be needed. However, for the purposes of this project, the parcel is being considered eligible for the National Register *(See Exhibit S35).*

Archaeological Resources

The potential for archaeological resources within the project area was reviewed by FHWA, NHDHR, and NHDOT during monthly Cultural Resource Agency Meetings on March 14, 2002 and June 13, 2002. Very early in project development, it was made known that at Bowman Divide, in the vicinity of the Bowman Inn, there have been materials recovered relating to the earliest period of Native American presence in New Hampshire (Paleoindian-period ca. 10,000 years ago), rendering it sensitive for archaeological resources.

An Archaeological Phase IA sensitivity survey was conducted in the spring of 2003. It included areas along the existing US Route 2 alignment and in the area of the southern bypass. There were sixteen (16) areas identified as sensitive along Southern Bypass "A" and five (5) areas along the existing alignment. As the Department's proposed action consists of the upgrade of the existing alignment, only those five (5) sensitive areas along US Route 2 were subject to Phase IB testing at 8 m (26 ft) intervals.

- Parcel 4 & Parcel 104: Historically, these parcels were known as the Bois Mountain Farm (ca. 1912) and Highland House (ca. 1875). Bois Mountain Farm was located on the north side of the roadway, with Highland House on the south side. This area was subject to archaeological testing due to the potential location for a snowmobile underpass. There were archaeological deposits recovered during excavation, however no evidence of intact structural features or discrete midden deposits was identified. Since the site does not appear to be eligible for the National Register of Historic Places, no further work is required at this location *(See Exhibit S36).*

- Parcel 10: Historic research has identified that this was the location of Ethan Allen Crawford's boarding house and inn, operating in the late 19th century. The ca. 1870 house was located on the north side of the roadway (behind Carter Spring). Associated barns were located near the roadway to the south *(See Exhibit S38).*

In the original Determination of Eligibility of the JHHD, NHDHR noted that, "The district is eligible under criteria A for its rich history, C for its architectural significance, and potentially D for its archaeological record of early White Mountain hotels. The District also has historical connections with the Crawford and Carter families, who both made important contributions to the White Mountains community."

The archaeological potential of this site is good, however, the Carter family garden plot is sited on the north side of the roadway, behind and above the spring. Although testing occurred adjacent to the garden, more intensive, systematic subsurface investigations are currently being undertaken to determine if it would be a contributing resource to the JHHD under Criterion D. As such, before the commencement of construction, all remaining testing and research will be completed on this site as part of the mitigation of historic resource impacts *(See Exhibit S38)*.

- Parcel 73: Farm fields of the 19th century Levi Lowe House (now the Webster property) are located on the north side of the roadway. Surface landscape features suggest that a barn or other outbuildings associated with the house were located on the south side of the roadway within the proposed impact area. Phase IB test pitting unearthed both historic and modern materials. However, the deposits lack information potential due to their disturbed context and lack of integrity. As a result, no additional survey is required at this location *(See Exhibit S37)*.

- Parcel 62 & Parcel 56: This site, at approximately Sta. 890+00, historically has had no structures or occupations *(See Exhibit D1)*. Since it is located adjacent to a small tributary to Moose River, and a snowmobile underpass is proposed in the vicinity, Phase IB testing was conducted to evaluate the potential for prehistoric sites. As a result of this testing, no buried soil horizons were observed and no cultural materials were recovered. No additional survey is required at this location.

Effects on Historic Resources

Effects on historic properties were determined by the NHDHR, FHWA and NHDOT based on the Section 106 review process established by the National Historic Preservation Act of 1966 and outlined in 36 CFR 800.9. Effects on the National Register eligible JHHD and individually eligible properties are a result of construction of the proposed action, including widening, drainage improvements and alignment improvements. It was determined at the February 8, 2004 Cultural Resources Agency Coordination Meeting that the impacts would have an "Adverse Effect" on historical resources. Effects are as follows in the table on the following page:

Permanent Impacts to Historic Resources

Parcel #	Owner(s)	Historic Parcel Name	Parcel Size		Acquisitions		Easements	
			Ha	Ac	m^2	ft^2	m^2	ft^2
Contributing Elements of the Jefferson Highlands Historic District [132 ha (327 ac)]								
6	St. John United Methodist Church	Highland Chapel	0.2	0.5			175	1,884
10	Carter Boismont Realty Trust	Dartmouth (Boismont) Cottage, etc.	58.7	145.0			300	3,229
11	Wells, Thomas D. & Tricia	Hoople Cottage	3.8	9.3			23	248
99	Carter Boismont Realty Trust	Carter Boismont Realty Trust	58.7	145.0			400	4,306
101	Ribner, Carol S.	The Hummocks	2.8	6.9			109	1,173
Individually Eligible Properties								
13	Hurzeler, Marc A. & Rosemary J.	John Crawshaw, Sr. House and Mountaineer Cabins	44.6	110.0			186	2,002
36	RLT Agr. A. E. Farrar & V. C. Farrar	Levi Lowe House	31.6	78.0	56	603	162	1,744

As can be seen above, there are no permanent acquisitions from contributing elements of the JHHD. Permanent easements within the District total 1,007 m^2 (10,839 ft^2). These impacts represent approximately 0.08% of the entire District.

In addition to the property impacts above, NHDHR felt that the project would also have non-acquisition, visual impacts to the District. The addition of shoulders and drainage ditches, as well as the proposed change in the roadway grade to correct vertical geometric deficiencies at Carter Spring, would cause vehicular traffic, especially tractor-trailer trucks, to be more visible from the Carter property (Parcel 10), creating a visual intrusion where one does not exist today. Moreover, the visual appearance of the roadway would be altered by construction. NHDHR determined that these impacts, coupled with the property level impacts, would result in a Section 106 "Adverse Effect" on the District *(See Exhibit P)*. Pursuant to Section 106 of the National Historic Preservation Act (36 CFR 800), a Memorandum of Agreement (MOA) addressing the Proposed Action and mitigation has been developed (*See Exhibit* V). For additional information, see **Part III: Draft Section 4(f) Evaluation.**

Mitigation of Historic Resource Impacts

It was agreed among FHWA, NHDHR and NHDOT that impacts to the JHHD and individually eligible resources are unavoidable and that several measures will be implemented to mitigate for these impacts.

1. Correcting vertical geometric deficiencies at Carter Spring requires the roadway to be raised approximately 0.9 m - 1.2 m (3.0 ft - 4.0 ft). This change will cause vehicular traffic, especially tractor-trailer trucks, to be more visible from the Carter property (Parcel 10), creating a visual intrusion where one does not exist today. To maintain visual separation, the Department will provide vegetative plantings such as hedges and shrubbery on the north side of the road above the spring. The type and variety will be coordinated with the property owner, FHWA and SHPO prior to construction to ensure that proposed treatments will suffice as mitigation and will be visually consistent with the District.

2. As the "Golden Terrace" is a contributing element of the JHHD, and the Carter Spring is an important local and regional attraction, the roadway alignment will remain in its existing location to avoid impacts to both.

3. The Department will erect a state historic marker at an appropriate location (potentially at The "Golden Terrace") explaining the significance of the JHHD. Language on the sign will be developed by the citizens of the District, Jefferson selectmen and NHDHR.

4. Using the same design and workmanship, and as much of the original material as possible, the Department will rebuild, in-kind, in approximately the same location, any stonewalls impacted by construction, unless setting them back to the right-of-way line would be required to meet clear zone requirements.

5. To inform motorists and visitors of the special, historic nature of the JHHD, the Department will construct gateway entrance signs with appropriate landscaping at both the western and eastern limits of the District.

6. All appropriate, remaining phases of archaeological testing and research will be completed at areas of proposed impact at Carter Spring (Parcel 10).

7. Vibratory monitoring will be undertaken at buildings within the JHHD that could be susceptible to construction vibrations. This monitoring will include a pre-construction assessment and modification of construction techniques when reaching critical vibration levels.

8. Construction of the reduced typical section (3.3 m (11.0 ft) travel lanes with 1.2 m (4.0 ft) shoulders) in the JHHD. The AASHTO standard cross section for this type of roadway is 3.6 m (12.0 ft) travel lanes with 2.4 m (8.0 ft) shoulders. Construction of this reduced typical will require a design exception from AASHTO standards.

Construction Impacts

Construction of this project is anticipated to cause temporary increases in noise and dust levels within the project area. All standard measures will be employed to ensure such increases are minimized to the extent practicable and limited to the construction period.

Access to all properties will be maintained throughout construction. While through traffic will be maintained during construction, the roadway will likely need to be narrowed in places to a single lane of alternating one-way traffic. In addition, periodic travel on gravel surfaces will be likely. Any temporary suspensions of through traffic will be held to a minimum.

The project contractor will be required to prepare a Storm Water Pollution Prevention Plan (SWPPP), approved by the Department, prior to the commencement of construction activities.

Standard pollution prevention measures will be employed to assure all negative impacts are avoided and/or minimized to the maximum extent practicable.

Vibratory monitoring will be undertaken at buildings within the JHHD that are susceptible to construction vibrations. This monitoring will include a pre-construction assessment and modification of construction techniques when reaching critical vibration levels.

Coordination & Public Participation

Letters were sent to various Federal, State and local agencies, as well as the general public, requesting input on this project on the following dates:

Agency / Organization	Contact	Date Sent	Date Received
Town of Jefferson			
Board of Selectmen	Michelle Ward	12/10/2001	3/31/2003
Road Agent	Paul Couture	12/10/2001	-
Historical Society	Joseph Marshall	12/10/2001	-
Emergency Management	Jeffrey Wiseman	12/10/2001	-
Conservation Commission	David Govatski	12/10/2001	4/22/2003
Town of Randolph			
Board of Selectmen	Maureen Sewick	12/10/2001	-
Road Agent	Terry Corrigan	12/10/2001	-
Planning Board	John Scarinza	12/10/2001	-
Conservation Commission	James Meiklejohn	12/10/2001	5/9/2002
Emergency Management	Curtis Chaffee	12/10/2001	-
North Country Council	Michael King	12/10/2001	-
US Fish and Wildlife Service	Bill Neidermyer	12/10/2001	1/10/2002
NH DRED, LWCF	Torene Tango-Lowy	12/10/2001	12/24/2001
NH Division of Historical Resources	Linda Wilson	12/10/2001	2/1/2002
NH Natural Heritage Bureau	Sara Cairns	12/10/2001	12/14/2001
NH Department of Resources and Economic Development – Trails	Bob Spoerl	12/10/2001	-
NH Office of Emergency Management	George Musler	12/10/2001	12/19/2001
US Forest Service White Mountain National Forest	Bill Dauer	12/10/2001	-
NH Office of State Planning, LCIP	Laura Pfister	12/10/2001	12/17/2001

Meetings were held periodically with various Federal, State and local agencies, as well as with the general public throughout the development of this project. Project review meetings were held on the following dates:

Date	Topic
March 14, 2002	Cultural Resource Agency Meeting
April 4, 2002	Cultural Resource Agency Meeting
April 17, 2002	Natural Resource Agency Meeting
April 25, 2002	Pre-design Public Workshop
June 13, 2002	Cultural Resource Agency Meeting
August 21, 2002	Natural Resource Agency Meeting

November 12, 2002	Public Officials Meeting
February 19, 2003	Natural Resource Agency Meeting
March 19, 2003	Natural Resource Agency Meeting
March 26, 2003	Public Informational Meeting and Open House Sessions
April 10, 2003	Cultural Resource Agency Meeting
April 16, 2003	Natural Resource Agency Meeting
October 15, 2003	Natural Resource Agency Meeting
November 19, 2003	Cultural Resource Agency Meeting
December 11, 2003	Cultural Resource Agency Meeting
February 8, 2004	Cultural Resource Agency Meeting
February 12, 2004	Jefferson Conservation Commission Meeting
February 18, 2004	Natural Resource Agency Meeting
March 31, 2004	Jefferson & Randolph Conservation Commissions Meeting.
June 23, 2004	Natural Resource Agency Meeting
July 21, 2004	Natural Resource Agency Meeting
September 3, 2004	Cultural Resource Agency Meeting
March 17, 2005	Public Hearing
November 2, 2005	Natural Resource Agency Meeting
February 21, 2006	Natural Resource Agency Meeting
August 23, 2006	Special Committee Meeting
September 14, 2006	Cultural Resource Agency Meeting

A Public Hearing was held for this project on March 17, 2005. The Department has responded to all issues and questions from the hearing in the Report of the Commissioner (*See Exhibit W*). The major concerns included exceptions to the limitation of access on US Route 2, roadway alignment at the former Randolph Fire Station, wildlife crossing issues, construction of a bypass of the Jefferson Highlands Historic District and the location of proposed snowmobile underpasses. Where appropriate, relevant sections of this document have been altered from what was contained in the Draft Categorical Exclusion to reflect changes in the Department's design.

The US Department of the Interior commented on the Draft Environmental Study for this project on July 7, 2005. The Director of the Office of Environmental Policy and Compliance requested clarification of three (3) sections of this Environmental Study: **Evaluation of Environmental Effects**, **Water Quality/ Surface Waters** and **Floodplains/ Floodways**. Each issue/ concern has been explained under each section. For more information, see the appropriate sections of this document.

Summary of Environmental Commitments:

The following environmental commitments have been made for this project.

1. Prior to the commencement of work, the contractor shall submit a Stormwater Pollution Prevention Plan specific to this project**.** The plan shall be approved by the Department and implemented and monitored as noted. **(P 19) (Construction/ Environment)**

2. Precautions shall be employed to minimize noise and dust levels during the construction period, primarily for the abutting receptors located adjacent to the project area. **(P 30) (Construction)**

3. To maintain visual separation between the roadway and the Carter property (Parcel 10), the Department shall provide vegetative plantings such as hedges and shrubbery per a landscaping plan. The type and variety will be coordinated with the property owner affected by the roadway grade adjustment, FHWA and SHPO prior to construction to ensure that proposed treatments will suffice as mitigation and will be visually coherent within the District. **(P 29) (Environment/ Design/ Construction)**

4. The Department shall erect a state historic marker at an appropriate location, explaining the significance of the Jefferson Highlands Historic District (JHHD). Language on the sign shall be developed by the citizens of the District, Jefferson selectmen and NHDHR. **(P 29) (Environment/ Design/ Construction)**

5. Using the same design and workmanship and as much of the original material as possible, stonewalls impacted by construction shall be rebuilt, in-kind, in approximately the same location, unless setting them back to the right-of-way line would be required to meet clear zone requirements. **(P 30) (Design/ Construction)**

6. To alert motorists and visitors to the special, historic nature of the Jefferson Highlands Historic District (JHHD), the Department shall construct gateway entrance signs with appropriate landscaping at the western and eastern limits of the District. **(P 30) (Environment/ Design/ Construction)**

7. All appropriate, remaining phases of archaeological testing and research shall be completed at areas of proposed impact in the vicinity of Carter Spring. **(P 30) (Environment)**

8. Vibratory monitoring shall be undertaken at buildings within the Jefferson Highlands Historic District (JHHD) that could be susceptible to construction vibrations. This monitoring shall include a pre-construction assessment and modification of construction techniques when reaching critical vibration levels. **(P 30) (Construction)**

9. To minimize and reduce the number of animal/vehicle collisions at the intersection of NH Route 115 and US Route 2, the Department shall consider the construction of enhanced signage, an infrared detection system and/or construction of additional delineator posts. At Bowman Divide, the Department shall consider the incorporation of additional delineator posts and enhanced signage. **(P 7) (Design/ Maintenance/ Environment/ Construction)**

10. Compensatory wetland mitigation shall be provided for impacts associated with the proposed action. The Department shall transfer ownership of a 12 ha (30 ac) parcel owned by the State of NH along NH Route 115 in Jefferson (Map 13 Lot 13) to the USF&WS or other appropriate entity. The parcel is adjacent to the Pondicherry National Fish and Wildlife Refuge, with the White Mountain National Forest to the south. The Department shall continue to work with resource agencies and the towns of Jefferson and Randolph to ensure that mitigation is acceptable to all parties. **(P 21) (Environment/ Design/ Construction/ Right-of-Way)**

PART III. FINAL SECTION 4(f) EVALUATION

Introduction

Pursuant to Section 4(f) of the Department of Transportation Act of 1966, 49 U.S.C. 303(c), and Section 18(a) of the Federal-Aid Highway Act of 1968, 23 U.S.C. 138 (as amended by the Federal-Aid Highway Act of 1983), the Secretary of Transportation may approve a program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of National, State, or local significance, or land of an historic site of national, State, or local significance (as determined by Federal, State, or local officials having jurisdiction over the park, area, refuge or site) only if:

1. There is no prudent and feasible alternative to using that land, and

2. The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife or waterfowl refuge, or historic site resulting from the use.

Coordination was established with local and state officials, and it was determined that there would be no publicly owned public parks, recreation areas, or wildlife or waterfowl refuges impacted by the proposed project.

The Department has coordinated with the NH Division of Historical Resources (NHDHR) and FHWA, to locate and identify National Register of Historic Places listed or eligible properties within the area and has determined how they would be affected by the proposed project. In addition, two (2) local property owners became Consulting Parties to the Section 106 process. The project was reviewed with NHDHR, FHWA and Consulting Parties at regularly scheduled Cultural Resource Agency Coordination Meetings on March 14, 2002; April 4, 2002; June 13, 2002; April 10, 2003; November 19, 2003; December 11, 2003; February 8, 2004; September 3, 2004 and September 14, 2006. A Memorandum of "Adverse Effect" was signed on February 8, 2004 *(See Exhibit P)*, and a Memorandum of Agreement (MOA) was signed on September 14, 2006 (*See Exhibit V*).

This Section 4(f) Evaluation provides the required documentation to demonstrate that there is no prudent and feasible alternative to the use of land from Section 4(f) historic resources. This evaluation also outlines coordination that has occurred and the measures proposed to minimize harm to these resources.

Existing Conditions/ Proposed Action

The study area for the project begins at NH Route 115 in Jefferson and extends east approximately 8.1 km (5.1 mi) to Durand Road West in Randolph. Proposed reconstruction begins at a point 760 m (2,493 ft) east of NH Route 115 and extends easterly 5.7 km (3.5 mi) to a point approximately 1,680 m (5,512 ft) west of Durand Road West. A 320 m (1,050 ft) gap built in the 1990's in the vicinity of Valley Road does not require reconstruction. Work also involves safety improvements, including shoulder widening, repaving, and guardrail and drainage improvements *(See Exhibit A2 & A3)*.

The existing roadway in the region was built in the 1920s and 1930s with various improvements completed over the years. For more information, see the **Existing Condition/ Need** section in **Part II** of this document.

The Average Annual Daily Traffic (AADT) on this section of roadway is 4,700 vehicles per day (vpd), with 20% trucks, and is expected to increase to 6,350 vpd by the year 2025. Accident data during the period of January 1993 – December 2001 indicates that seventy (70) accidents occurred within the project limits in Jefferson. Thirty-one (31) of these were in snowy/icy conditions, twenty-four (24) were with animals, and three (3) were at the US Route 2/NH Route 115 intersection. Nineteen (19) of these accidents resulted in injuries, and two (2) involved fatalities. In Randolph, for the same period, there were sixty-five (65) accidents. Twenty-three (23) of these were in snowy/icy conditions; twenty-seven (27) were with animals, while two (2) were at intersections (one (1) at the US Route 2/Valley Road intersection and one (1) at the US Route 2/Durand Road West intersection). Nineteen (19) of these accidents resulted in injuries, with zero (0) fatalities.

Deficiencies exist throughout the project corridor. See **Existing Condition/ Need** section in Part II of this document for more information. The proposed improvements consist of the following *(See Exhibits A3 & D1)*:

1. Reconstruct the existing roadway with select materials (12 in. (300 mm) gravel, 12 in. (300 mm) crushed gravel and 12 in. (300 mm) of sand) from approximately Sta. 813+00 at the beginning of the project, easterly 5.7 km (3.5 mi) to approximately Sta. 870+00 at the beginning of the 1960s improved portion of roadway.

2. Within the JHHD, from approximately Sta. 814+80, east 1.5 km (0.9 mi) to approximately Sta. 830+00, widen the roadway from the existing varying cross section of 3.6 m (12.0 ft) travel lanes with 0.3 m – 0.9 m (1.0 ft – 3.0 ft) shoulders, to construct 3.3 m (11.0 ft) travel lanes with 1.2 m (4.0 ft) shoulders. Widened shoulders will improve the safety of motor vehicles, pedestrians and bicyclists traveling this section of roadway *(See Exhibit E1)*. The AASHTO standard cross section for this type of roadway is 3.6 m (12.0 ft) travel lanes with 2.4 m (8.0 ft) shoulders. Construction of this reduced typical will require a design exception from AASHTO standards. The posted speed limit on this section of roadway will be 60 kph (35 mph).

3. Outside the JHHD, from approximately Sta. 830+00, east 2.3 km (1.4 mi) to approximately Sta. 853+00, widen the roadway from the existing varying cross section of 3.6 m (12.0 ft) travel lanes with 0.3 m – 0.9 m (1.0 ft – 3.0 ft) shoulders, to achieve a uniform 3.6 m – 1.2 m (12.0 ft – 4.0 ft) typical section. Widened shoulders will improve the safety of motor vehicles, pedestrians and bicyclists traveling this section of roadway. The posted speed limit on this section of roadway will be 80 kph (50 mph).

4. From approximately Sta. 825+00, continuing east 0.7 km (0.4 mi) to approximately Sta. 832+00, realign the roadway to provide a maximum offset of approximately 3.6 m (12.0 ft) from the existing centerline to correct deficiencies in the vertical geometry while minimizing impacts upon the Wells property (parcel 11).

   From approximately Sta. 858+00, continuing east 0.4 km (0.3 mi) to approximately Sta. 862+00, realign the roadway approximately 7.5 m (25.0 ft) south of the existing alignment in the vicinity of Parcel 35 to correct deficiencies in the vertical geometry while avoiding impacts upon the National Register eligible Farrar property (Parcel 36).

From approximately Sta. 863+00, continuing east 0.4 km (0.2 mi) to approximately Sta. 867+00, realign the roadway approximately 21.0 m (68.9 ft) north of the existing alignment in the vicinity of the former Randolph Fire Station (Parcel 70) to correct deficiencies in the horizontal geometry *(See Exhibit S3)*. This alignment shift will require the acquisition and removal of the former fire station. The Town of Randolph will not be requesting a functional replacement for the old firehouse and the Department will not be providing a functional replacement.

5. Pave the portion of reconstructed roadway from approximately Sta. 813+00 at the beginning of the project, easterly 5.7 km (3.5 mi) to approximately Sta. 870+00 at the beginning of the 1960s improved portion of roadway.

   Beginning at approximately Sta. 805+40, continuing east 0.7 km (0.4 mi) to the start of the proposed full-depth reconstruction at approximately Sta. 813+00, overlay the existing pavement in the area of the 1990s improvements.

   Beginning at approximately Sta. 870+00, continuing east 2.0 km (1.2 mi) to the project terminus at approximately Sta. 889+00, overlay the existing pavement in the area of the 1960s improvements.

6. Raise the profile of the roadway approximately 0.9 m (3.0 ft) at Carter Spring (approximately Sta. 824+40) to correct the deficient vertical curve and improve sight distance *(See Exhibit S4)*.

   Lower the profile of the roadway at the crest of the hill east of Valley Road (approximately Sta. 856+00) in the vicinity of the Farrar property (Parcel 35) approximately 1.2 m (4.0 ft) to correct the deficient vertical curve and improve sight distance.

7. Replace existing deficient sections of guardrail throughout the project limits. Throughout the corridor there exists cable guardrail that does not meet Federal crashworthiness standards. All substandard sections will be replaced with beam guardrail, or eliminated where roadway slopes can be flattened to eliminate the need *(See Exhibit S5)*.

8. Replace and/or extend numerous roadway cross culverts within the project limits. These culverts carry primarily intermittent streams and roadway drainage under US Route 2 *(See Exhibit S6)*.

9. Construct 1.8 m (6.0 ft) wide drainage ditches within all cut areas.

10. Construct a pedestrian/snowmobile underpass at approximately Sta. 888+60. Currently, snowmobiles must cross the highway in this area to connect to State numbered trails to the north and south and access services at Lowe's Store. This underpass has been designed to align with the existing snowmobile trail network. In addition, hikers will be afforded a more direct connection under the highway to the White Mountain National Forest trails, Lowe's Store and associated trailhead parking. The underpass will enhance safety for both the trail users and motor vehicles on the roadway.

11. To minimize and reduce the number of animal/vehicle collisions at the intersection of NH Route 115 and US Route 2, consideration will be given to the recommendations in the wildlife

study currently being conducted by the Audubon Society of New Hampshire (ASNH), which could include construction of enhanced signage, enhanced lighting, an infrared detection system and/or erection of additional delineator posts. At Bowman Divide, consideration will be given to the recommendations in the wildlife study currently being conducted by ASNH, additional delineator posts and/or enhanced signage. See the **Wildlife/ Fisheries/ Endangered Species/ Natural Communities** section in Part II of this document for more information.

Description of Historic 4(f) Resources:

At the westerly limit of the project area in Jefferson Highlands is an historic district: the Jefferson Highlands Historic District (JHHD). The District boundary begins with the Highland Chapel (Parcel 6) at the west, and terminates with Hoople Cottage (Parcel 11) and Carter's Cut Road at the east, a distance of approximately 1.2 km (0.8 mi) (*See Exhibit B*). The District is approximately 132 ha (327 ac) in size, and includes all of the extant resources relating to the turn-of-the-century summer community *(See Exhibit B)*. The contributing elements and individually eligible properties in the District are described under **Contributing Elements of the JHHD** below. In addition to the JHHD, individual properties were surveyed for their National Register of Historic Places eligibility. These additional individually eligible properties, outside the JHHD, are described under **Individually Eligible Properties** below.

Contributing Elements of the JHHD

The following parcels contribute to the integrity of the Jefferson Highlands Historic District. In addition, many of these resources are individually eligible for the National Register of Historic Places.

- Parcel 6: Highland Chapel: Built in 1889-1890, the chapel is a vernacular, wood frame, gable-front structure, resting on a stone foundation. The roof is covered with asphalt shingles and walls are clad with wood clapboards. The south-facing façade features a three-stage tower that incorporates the main entrance at the ground level, a window on the second, and a belfry with segmental arch openings on the third. Although contributing within the JHHD, the property lacks sufficient historical or architectural significance to be individually eligible *(See Exhibit S24)*.

- Parcel 10: Dartmouth (Boismont) Cottage: Built in 1894 in the Queen Anne style and remodeled and moved back from the roadway in 1917 into its existing Colonial Revival appearance, the 2 ½-story building sits on a fieldstone foundation and has a gambrel roof covered with asphalt shingles. A broad stonewall, built ca. 1917, runs along the property's Route 2 frontage. This property is contributing within the JHHD. Moreover, it is individually eligible under Criteria A and C *(See Exhibit S29).*

- Parcel 10: George Hallowell Studio: This studio is a small, 1-story, wood frame structure set back from the roadway between Siwooganock Cottage and Dartmouth (Boismont) Cottage. The building sits on a granite foundation; walls are covered with clapboards. The roof is clad with asphalt shingles. The building is a contributing element within the JHHD, and is individually eligible under Criteria A and C *(See Exhibit S30).*

- Parcel 10: Siwooganock Cottage: Built in ca. 1880, this 2 ½-story house is an excellent example of the Stick Style/ Queen Anne styles. It is a sidehall, side-gable, nearly square plan house sited perpendicular to the roadway. The foundation is fieldstone, walls are clapboard on

the first story and shingle on the second. The roof is covered with asphalt shingles. The building is a contributing element within the JHHD, and is individually eligible under Criteria A and C *(See Exhibit S31).*

- Parcel 11: Hoople Cottage: This house dates from 1892 and the outbuildings from approximately the same year; each features elements of the Queen Anne style. The original section of the house is a 2 ½-story, front gable, two-bay wide structure. The foundation is brick, and the roof is clad with asphalt shingles. The two (2) outbuildings on the property survive with minimal alterations. The stable, closest to the house, is a 1 ½-story structure gable-end to the roadway and resting on a stone and concrete foundation. Walls are covered with clapboards. The carriage house is perpendicular to and west of the stable. Its walls are clad with clapboards and plain shingles. Hoople Cottage is a contributing property within the JHHD, however loss of integrity of materials is due to synthetic siding. The property is not individually eligible due to lack of individual significance and post-1950 alterations *(See Exhibit S28).*

- Parcel 98: McCabe Carriage House: Located on this parcel are a carriage house and summerhouse built in 1907 and a residence built ca. 1933 to replace a summer cottage that burned in 1927 or 1928. The carriage house is a square plan structure on a fieldstone foundation with asphalt shingles. Walls are clad with shingles. The summerhouse is a rectangular structure with shingled walls. The main house is a 1-story, pre-fabricated dwelling located east of the outbuildings. The McCabe Carriage House and summerhouse are contributing elements within the JHHD. The McCabe House is non-contributing *(See Exhibit S32).*

- Parcel 99: Golden Terrace: Although the parcel as a whole is not contributing within the District, there is one contributing feature on site; a flattened, curved terrace with a high stone retaining wall along the south curve. Built in ca. 1905, it was intended to screen the barns and farm animals from view of the main residence to the north of the roadway. Due to its size and expense, this wall has always been referred to as the "Golden Terrace" *(See Exhibit S40).*

- Parcel 100: The Knolls: This house is a 1 ½-story, front-gable/ side wing building constructed in 1882 in the Shingle Style and remodeled somewhat ca. 1930. Walls are clad with shingles and the roof with asphalt shingles. This property is a contributing property within the JHHD, and may also be individually eligible under Criterion C *(See Exhibit S27).*

- Parcel 101: The Hummocks ice house, tool house and garage: All three (3) of these small, wood frame structures were built between 1898 and 1923. Each is considered a rare estate outbuilding. They lack National Register significance on their own, but contribute to the District *(See Exhibit S25).*

- Parcel 101: Carter's Stone Tower: This 9 m (30 ft) observation tower was built of local fieldstone and erected in 1898. Narrow slits in the sidewalls provide views as one ascends the interior circular stairs. An observation platform covered by a conical roof and capped by a finial tops the structure. The tower is a contributing resource within the District, and is also individually eligible under Criterion C, as one of only two (2) privately erected observation towers still standing within the White Mountains *(See Exhibit S26).*

Individually Eligible Properties

The following parcels do not lie within the limits of a National Register of Historic Places eligible or listed historic district, but are individually eligible for the National Register of Historic Places.

- Parcel 13: John Crawshaw, Sr. House & Mountaineer Cabins: This property consists of a 1 ½-story, side-gable, 5-bay dwelling erected ca. 1850 and remodeled in the early twentieth century. Its foundation has been parged with concrete, obscuring the original material beneath. The roof is covered with asphalt shingles. The Mountaineer Cabins are a group of seven (7) rustic cabins arranged on the edge of a broad, open hillside facing southeast. They are each a 1-story, side-gabled roof structures, clad with wood shingles or board and batten. Although the main house has lost some degree of integrity of design, workmanship, feeling and association, it retains integrity of location, materials and setting. The Mountaineer Cabins retain a high level of integrity of location, design, materials, setting workmanship, feeling and association. The property, as a whole, is individually eligible under Criteria A and C *(See Exhibit S33).*

- *No Parcel Number*: William B. Paschal Farm: The house is a 1 ½-story, side-gable house on a concrete block foundation. The gable roof, which is oriented parallel to the road, is sheathed with asphalt shingles. The eaves project slightly and return at the corners. Walls are covered with clapboards and trimmed with plain boards. The main entrance is centered on the historic façade and features a Greek Revival surround and partial sidelights. Projecting from the west gable end is a 1 ½-story wing that is likely original to the house. This parcel is eligible for the National Register under Criteria A for its associations with agriculture, an important 19th and early 20th century local historical context *(See Exhibits R & S34).*

- Parcel 36: Levi Lowe House: Built in ca. 1790, the 1 ½-story house is one of the oldest extant buildings in Randolph. It is a side-gable house that was likely originally a five-bay cape, but now reflects late 19th century – early 20th century alterations. It rests on a granite block foundation and is clad with wooden shingles with plain trim consisting of corner boards, casings, and cornice returns. Projecting from the rear is a 1 ½-story ell that dates from the 19th century. Although one of the oldest buildings in Randolph, it is still unclear as to its National Register eligibility. To make a final determination of eligibility further survey work would be needed. However, for the purposes of this project, the parcel is being considered eligible for the National Register *(See Exhibit S35).*

For more information on historic resources within the project area, see the **Cultural Resources** section in **Part II** of this document.

Impacts to Section 4(f) Properties

Impacts to Section 4(f) properties were determined by the NHDHR, FHWA and NHDOT based on the Section 106 review process established by the National Historic Preservation Act of 1966 and outlined in 36 CFR 800.9. It was determined at the February 8, 2004 Cultural Resource Agency Coordination Meeting that the impacts would have an "Adverse Effect" on historical resources. Impacts are as follows in the table below:

Section 4(f) Historic Resources Impacts

Parcel #	Owner(s)	Section 4(f) Property Name	Parcel Size		Acquisitions		Permanent Easements	
			Ha	Ac	m^2	ft^2	m^2	ft^2
Contributing Elements of the Jefferson Highlands Historic District [132 ha (327 ac)]								
6	St. John United Methodist Church	Highland Chapel	0.2	0.5			175	1,884
10	Carter Boismont Realty Trust	Dartmouth (Boismont) Cottage, etc.	58.7	145.0			300	3,229
11	Wells, Thomas D. & Tricia	Hoople Cottage	3.8	9.3			23	248
99	Carter Boismont Realty Trust	Carter Boismont Realty Trust	58.7	145.0			400	4,306
101	Ribner, Carol S.	The Hummocks	2.8	6.9			109	1,173
Individually Eligible Properties								
13	Hurzeler, Marc A. & Rosemary J.	John Crawshaw, Sr. House and Mountaineer Cabins	44.6	110.0			186	2,002
36	Webster, Mildred & Farrar, Almon E.	Levi Lowe House	31.6	78.0	56	603	162	1,744

As can be seen above, there are no permanent acquisitions from contributing elements of the JHHD. Permanent easements within the District total 1,007 m^2 (10,839 ft^2). These impacts represent approximately 0.08% of the entire District *(See Exhibit D2).*

In addition to the property impacts above, NHDHR felt that the project would also have non-acquisition, visual impacts to the District. The addition of shoulders and drainage ditches, as well as the proposed change in the roadway grade to correct vertical geometric deficiencies at Carter Spring, would cause vehicular traffic, especially tractor-trailer trucks, to be more visible from the Carter property (Parcel 10), creating a visual intrusion where one does not exist today. Moreover, the visual appearance of the roadway would be altered by construction. NHDHR determined that these impacts, coupled with the property level impacts, would result in a Section 106 "Adverse Effect" on the District *(See Exhibit P).* Pursuant to Section 106 of the National Historic Preservation Act (36 CFR 800), a Memorandum of Agreement (MOA) addressing the Proposed Action and mitigation has been developed (*See Exhibit V*).

Alternatives That Avoid and/or Minimize Impacts to Section 4(f) Properties

"No-Build"

The "No-Build" alternative is not considered feasible and prudent, as it does not address the existing safety deficiencies along this portion of US Route 2. Given the anticipated increases in AADT (currently 4,700 vpd and projected to increase to 6,350 vpd by the year 2025), coupled with the high percent truck traffic (20%), the safety concerns would persist, and the facility would substantially deteriorate. In addition, the impacts associated with the proposed action are not of a magnitude to warrant the selection of this alternative.

Bypass Alignment Alternatives

Area-Wide Bypass Alternatives

Alignments that "completely" bypass this section of US Route 2 are beyond the scope of this project. Although construction of any such alignment would avoid all impacts to the JHHD and individually eligible resources along the project corridor, there would be a need to acquire extensive amounts of new right-of-way. Any area-wide bypass would also have far greater impacts on undeveloped properties, streams, wetlands, farmlands, viewsheds, would result in much more wildlife habitat fragmentation, and would substantially increase project costs. As any area-wide bypass would involve steep and varying terrain, truck traffic would find the grade of the roadway difficult to overcome, resulting in substantially lower traveling speeds and unsafe travel. Moreover, there would still be a need to complete some remedial improvements along the bypassed portion of US Route 2. As such, any area-wide bypass was not considered feasible and prudent.

Jefferson Highlands Historic District Bypass Alternatives

Northern Bypass

Although this 3.2 km (2.0 mi) bypass alignment to the north would remove traffic entirely from the JHHD, the purpose and need of the project would not be met. As the terrain to the north consists of the steep slopes of Bois Mountain, truck traffic would find the grade of the roadway difficult to overcome, resulting in substantially lower traveling speeds and unsafe travel. The amount of new right-of-way required would be approximately 7.9 ha (19.6 ac) with no use of any contributing elements of the JHHD. Contrary to the Town of Jefferson Master Plan, this bypass would cause a reduction in open spaces and impacts to natural resources with two (2) new surface water crossings, the clearing of 6.1 ha (15.0 ac) of forest lands, and the isolation of approximately 93.2 ha (230.0 ac) of wildlife habitat between the existing US Route 2 and the proposed bypass alignment. The construction costs associated with this alternative would be approximately $1.8 million more than the proposed action. Moreover, there would still be a need to complete some remedial improvements along the bypassed portion of US Route 2. The remaining 6.4 km (4.0 mi) portion of US Route 2 east of Jefferson Highlands would receive a combination of reconstruction and pavement overlay treatments as in the proposed action *(See Exhibit F)*. Following completion of remedial improvements on the bypassed portion of roadway, ownership and all future maintenance responsibility would be turned over to the town of Jefferson. The Jefferson Board of Selectmen expressed unanimous concern that the town would be unwilling and unable to assume this responsibility without imposing an increased tax burden on the citizens of Jefferson.

Southern Bypass "A"

Initially developed by the residents of Jefferson Highlands, this conceptual alignment was carried through the preliminary design phase to a point commensurate with the on-alignment alternatives. It removes truck traffic from the JHHD in an effort to decrease noise pollution and increase safety on the bypassed section of the existing roadway. Although the construction of this 3.4 km (2.3 mi) bypass alignment would remove traffic from the existing US Route 2 through the JHHD, it would require a new location roadway through the historic district to the south. It would alleviate traffic problems on the existing roadway, but the additional right-of-way acquisitions would result in a use of approximately 3.0 ha (7.5 ac) of contributing elements of the JHHD, with total project acquisitions of approximately 9.1 ha (22.4 ac). Contrary to the Town of Jefferson Master Plan, this bypass would cause a reduction in open spaces and impacts to natural resources with four (4) new surface water crossings, the clearing of 7.3 ha (18.0 ac) of forest lands, and the isolation of approximately 62.8 ha (155.0 ac) of wildlife habitat between the existing US Route 2 and the proposed bypass alignment. The construction costs associated with this

alternative would be approximately $2.0 million more than the proposed action. Moreover, there would still be a need to complete some remedial improvements along the bypassed portion of US Route 2. The remaining 6.1 km (3.8 mi) portion of US Route 2 east of Jefferson Highlands would receive a combination of reconstruction and pavement overlay, as in the proposed action *(See Exhibit F)*. Following completion of remedial improvements on the bypassed portion of roadway, ownership and all future maintenance needs would be turned over to the town of Jefferson. The Jefferson Board of Selectmen expressed unanimous concern that the town would be unwilling and unable to assume this responsibility without imposing an increased tax burden on the citizens of Jefferson.

Southern Bypass "B"

The construction of this 4.0 km (2.5 mi) bypass alignment would remove traffic entirely from the JHHD with no use of any contributing element of the JHHD. The amount of new right-of-way required would be approximately 9.8 ha (24.5 ac). Contrary to the Town of Jefferson Master Plan, this bypass would cause a reduction in open spaces and impacts to natural resources with six (6) new surface water crossings (including two (2) major crossings of the Israel River), the clearing of 6.9 ha (17.0 ac) of forest lands, and the isolation of approximately 125.6 ha (310.0 ac) of wildlife habitat between the existing US Route 2 and the proposed bypass alignment. Wetland impacts would potentially be a major concern due to the quantity of crossings and quality of associated wetlands. The construction costs associated with this alternative would be approximately $3.0 million more than the proposed action *(See Exhibit F)*. Moreover, there would still be a need to complete some remedial improvements along the bypassed portion of US Route 2. The remaining 6.4 km (4.0 mi) portion of US Route 2 east of Jefferson Highlands would receive a combination of reconstruction and pavement overlay, as in the proposed action. Following completion of remedial improvements on the bypassed portion of roadway, ownership and all future maintenance needs would be turned over to the town of Jefferson. The Jefferson Board of Selectmen expressed unanimous concern that the town would be unwilling and unable to assume this responsibility without imposing an increased tax burden on the citizens of Jefferson.

On-Alignment Alternatives

Jefferson Highlands Historic District Widening

3.6 m-3.0 m (12.0 ft-10.0 ft) Typical Section

Early in the project development phase of this project the construction of 3.0 m (10.0 ft) wide paved shoulders within the JHHD was considered, due to the projected AADT, coupled with the 20% truck traffic. However, this action would have resulted in substantial property impacts to contributing elements of the National Register eligible District, and would have required substantial impacts to stonewalls. As a result of a combination of public and resource agency input, it was determined that the environmental impacts associated with this alternative were not feasible and prudent. Moreover, although AASHTO design standards recommend wider shoulders, shoulder widths of 1.2 m (4.0 ft) are adequate by State standards to safely accommodate bicyclists and pedestrians. Therefore, this alternative was not carried beyond the conceptual phase for further consideration *(See Exhibit E2B)*.

3.6 m-1.2 m (12.0 ft-4.0 ft) Typical Section

The construction of a 3.6 m-1.2 m (12.0 ft-4.0 ft) typical section was examined in an initial effort to minimize impacts within the JHHD. While this alternative met the project purpose and need of providing safe shoulders for pedestrians and bicyclists and providing a safer roadway in general, there was

still considerable right-of-way required from historic resources within the JHHD. This alternative would not only have resulted in impacts to stonewalls, but would have required the use of approximately 0.4 ha (1.1 ac) of contributing elements of the JHHD. One major concern expressed by the State Historic Preservation Officer (SHPO) and Section 106 Consulting Party was that a wider roadway would alter the visual appearance of the District. As such, this alternative was abandoned *(See Exhibit E2A).*

Widening East of Jefferson Highlands Historic District

3.6 m-3.0 m (12.0 ft-10.0 ft) Typical Section

Early during the project development phase of this project, the construction of 3.6 m (12.0 ft) travel lanes and 3.0 m (10.0 ft) wide paved shoulders was considered between the Jefferson Highlands and the developed section of US Route 2 in Randolph, given the projected AADT, coupled with the 20% truck traffic. However, this action would have resulted in substantial property impacts, including impacts to National Register eligible properties, and would have required substantial impacts to stonewalls lining the roadway. Moreover, although AASHTO design standards recommend wider shoulders, shoulder widths of 1.2 m (4.0 ft) are adequate by State standards to safely accommodate bicyclists and pedestrians. As such, it was determined that the level of improvement provided by this alternative would have resulted in property impacts and environmental impacts not commensurate with the added corridor width. Therefore, this alternative was not carried beyond the conceptual phase for further consideration *(See Exhibit E2B).*

Modified 3.6 m-1.2 m (12.0 ft-4.0 ft) Typical Section

An option to minimize the aesthetic intrusion of 3.0 m (10.0 ft) shoulders, while providing additional width on the sides of the roadway for increased public safety was evaluated during the project development phase of this project. A modified 3.6 m-1.2 m (12.0 ft-4.0 ft) typical section was considered between the Jefferson Highlands and the developed section of US Route 2 in Randolph. This modified typical would have consisted of 3.6 m (12.0 ft) travel lanes and 1.2 m (4.0 ft) paved shoulders. The modification would also construct 1.8 m (6.0 ft) grassed panels adjacent to the paved shoulders. While providing a slightly less visually intrusive appearance than the alternatives with 3.0 m (10.0 ft) paved shoulders, this modified typical would have had virtually the same footprint impacts, including natural resource and property impacts, as the 3.6 m-3.0 m (12.0 ft-10.0 ft) typical section, with the exception of narrower drainage ditches. As such, it was determined that the level of improvement provided by this alternative would have required property impacts and environmental impacts not commensurate with the added corridor width, therefore this alternative was not carried beyond the conceptual phase for further consideration *(See Exhibit E3).*

Measures to Minimize Harm/ Mitigation

The design of the proposed action has been developed with the intent of preserving the integrity and minimizing the potential impacts to properties that are eligible for the National Register of Historic Places. It was agreed among FHWA, NHDHR and NHDOT that impacts to the JHHD and individually eligible resources were unavoidable and that the following measures will be implemented to mitigate for these impacts.

1. Correcting vertical geometric deficiencies at Carter Spring requires the roadway to be raised approximately 0.9 m - 1.2 m (3.0 ft - 4.0 ft). This change will cause vehicular traffic, especially tractor-trailer trucks, to be more visible from the Carter property (Parcel 10),

creating a visual intrusion where one does not exist today. To maintain visual separation, the Department will provide vegetative plantings such as hedges and shrubbery on the north side of the road above the spring. The type and variety will be coordinated with the property owner, FHWA and SHPO prior to construction to ensure that proposed treatments will suffice as mitigation and will be visually coherent within the District.

2. As the "Golden Terrace" is a contributing element of the JHHD, and the Carter Spring is an important local and regional attraction, the roadway alignment will remain in its existing location to avoid impacts to both.

3. The Department will erect a state historic marker at an appropriate location (potentially at The "Golden Terrace") explaining the significance of the JHHD. Language on the sign will be developed by the citizens of the District, Jefferson selectmen and NHDHR.

4. Using the same design and workmanship, and as much of the original material as possible, the Department will rebuild, in-kind, in approximately the same location, any stonewalls impacted by construction, unless setting them back to the right-of-way line would be required to meet clear zone requirements.

5. To inform motorists and visitors of the special, historic nature of the JHHD, the Department will construct gateway entrance signs with appropriate landscaping at both the western and eastern limits of the District.

6. All appropriate, remaining phases of archaeological testing and research will be completed at areas of proposed impact at Carter Spring (Parcel 10).

7. Vibratory monitoring will be undertaken at buildings within the JHHD that could be susceptible to construction vibrations. This monitoring will include a pre-construction assessment and modification of construction techniques when reaching critical vibration levels.

8. Construction of the reduced typical section (3.3 m (11.0 ft) travel lanes with 1.2 m (4.0 ft) shoulders) in the JHHD. The AASHTO standard cross section for this type of roadway is 3.6 m (12.0 ft) travel lanes with 2.4 m (8.0 ft) shoulders. Construction of this reduced typical will require a design exception from AASHTO standards.

Coordination & Public Participation

Coordination meetings have been held among NHDHR, FHWA, NHDOT, Jefferson and Randolph Town Officials, Section 106 Consulting Parties and concerned citizens to discuss alternatives and measures to minimize harm to the Section 4(f) properties. The measures that were considered feasible and prudent were evaluated and incorporated into the design of the project. A Determination of Effects memo was prepared which addresses unavoidable impacts to the historic properties and appropriate mitigation *(See Exhibit P).* Pursuant to the provisions of Section 106 of the National Historic Preservation Act (36 CFR 800), a Memorandum of Agreement (MOA) addressing the Proposed Action and mitigation has been developed (*See Exhibit V*).

Letters were sent to various Federal, State and local agencies, as well as the general public, requesting input on this project on the following dates:

Project Correspondence

Agency / Organization	Contact	Date Sent	Date Received
Town of Jefferson			
Board of Selectmen	Michelle Ward	12/10/2001	3/31/2003
Road Agent	Paul Couture	12/10/2001	-
Historical Society	Joseph Marshall	12/10/2001	-
Emergency Management	Jeffrey Wiseman	12/10/2001	-
Conservation Commission	David Govatski	12/10/2001	4/22/2003
Town of Randolph			
Board of Selectmen	Maureen Sewick	12/10/2001	-
Road Agent	Terry Corrigan	12/10/2001	-
Planning Board	John Scarinza	12/10/2001	-
Conservation Commission	James Meiklejohn	12/10/2001	5/9/2002
Emergency Management	Curtis Chaffee	12/10/2001	-
North Country Council	Michael King	12/10/2001	-
US Fish and Wildlife Service	Bill Neidermyer	12/10/2001	1/10/2002
NH DRED, LWCF	Torene Tango-Lowy	12/10/2001	12/24/2001
NH Division of Historical Resources	Linda Wilson	12/10/2001	2/1/2002
NH Natural Heritage Bureau	Sara Cairns	12/10/2001	12/14/2001
NH Department of Resources and Economic Development – Trails	Bob Spoerl	12/10/2001	-
NH Office of Emergency Management	George Musler	12/10/2001	12/19/2001
US Forest Service White Mountain National Forest	Bill Dauer	12/10/2001	-
NH Office of State Planning, LCIP	Laura Pfister	12/10/2001	12/17/2001

Meetings were held periodically with various Federal, State and local agencies, as well as with the general public throughout the development of this project. Project review meetings were held on the following dates:

Project Review Meetings

Date	Topic
March 14, 2002	Cultural Resource Agency Meeting
April 4, 2002	Cultural Resource Agency Meeting
April 17, 2002	Natural Resource Agency Meeting
April 25, 2002	Pre-design Public Workshop
June 13, 2002	Cultural Resource Agency Meeting

August 21, 2002	Natural Resource Agency Meeting
November 12, 2002	Public Officials Meeting
February 19, 2003	Natural Resource Agency Meeting
March 19, 2003	Natural Resource Agency Meeting
March 26, 2003	Public Informational Meeting and Open House Sessions
April 10, 2003	Cultural Resource Agency Meeting
April 16, 2003	Natural Resource Agency Meeting
October 15, 2003	Natural Resource Agency Meeting
November 19, 2003	Cultural Resource Agency Meeting
December 11, 2003	Cultural Resource Agency Meeting
February 8, 2004	Cultural Resource Agency Meeting
February 12, 2004	Jefferson Conservation Commission Meeting
February 18, 2004	Natural Resource Agency Meeting
March 31, 2004	Jefferson & Randolph Conservation Commissions Meeting.
June 23, 2004	Natural Resource Agency Meeting
July 21, 2004	Natural Resource Agency Meeting
September 3, 2004	Cultural Resource Agency Meeting
March 17, 2005	Public Hearing
November 2, 2005	Natural Resource Agency Meeting
February 21, 2006	Natural Resource Agency Meeting
August 23, 2006	Special Committee Meeting
September 14, 2006	Cultural Resource Agency Meeting

A Public Hearing was held for this project on March 17, 2005. The Department has responded to all issues and questions from the hearing in the Report of the Commissioner (*See Exhibit W*). The major concerns included exceptions to the limitation of access on US Route 2, roadway alignment at the former Randolph Fire Station, wildlife crossing issues, construction of a bypass of the Jefferson Highlands Historic District and the location of proposed snowmobile underpasses. Where appropriate, relevant sections of this document have been altered to reflect changes in the Department's design.

The US Department of the Interior commented on the Draft Section 4(f) Evaluation for this project on July 7, 2005. The Director of the Office of Environmental Policy and Compliance stated in that letter, *"In our understanding and consideration of the various outlooks, pro and con, as to alternative routings to satisfy the purpose and need for this road improvement, we would concur there are no prudent and feasible new alternative alignments, however, refinements of the various options along the existing route (Preferred Alternative B) should be accomplished to the satisfaction of the SHPO…"* The Department will continue to work with all interested parties as the project proceeds through the remainder of design (*See Exhibit X*).

Summary Statement

As has been demonstrated by this document, there are no feasible and prudent alternatives to the use of Section 4(f) property. It has been demonstrated that "there are unique problems or unusual factors involved in the use of alternatives that avoid these properties or that the cost, social, economic and environmental impacts, and community disruption resulting from such alternatives reach extraordinary magnitudes" (23 CFR 771.135 (a) (2)), especially when considered in relation to the impacts to Section

4(f) properties associated with the Proposed Action. The Proposed Action includes all possible planning to minimize harm to Section 4(f) properties resulting from such use.